Featured Farmers: Plen Yep

Raising chickens in a traditional style for a Cambodian community

Plen Yep and his wife Chean-Chaum live in a community of about 10 Cambodian families near Inman, South Carolina. The farm is 14 acres with one acre for pastured poultry. Other enterprises include fruit trees and caged fish production. His two children Paith (22) and Rebecca (14) also help with pastured poultry production and processing. Plen works off the farm at a mill. Plen was trained in pastured poultry production in Kentucky.

Plen Yep (standing) poses with other farmer trainees at a Kentucky training.

Snapshot: Getting started

Plen started with a first batch of 300 chicks. They arrived on the farm 6/4/97 and were placed in pastured field pens 5 weeks later. Plen reported a total of 57 of the 300 birds were lost during production due to heavy rain and a cold night in August. A total of 190 were slaughtered at 12 weeks old on 8/28/97. Plen kept 20 for eating at home and gave away 10 as free samples. Thirty were sold live. Processed chickens were sold for $6.25 each. Chickens used for home and free samples were valued at $4.50 each. Plen used 3050 lbs of feed (14 lbs. per bird). The feed cost 15 cents per lb. His expenses and income for the first batch of 300 birds are summarized below.

THE CONCENTRATE DIET IS SOMETIMES SUPPLEMENTED BY RICE AT FINISHING, A CAMBODIAN TRADITION.

Birds are processed at about 12 weeks for fuller flavor. The family processes in a shed using equipment on loan from HPI. They sell the birds for about $6–7 a piece, weighing them if requested by customers. Most customers pick them up fresh but they freeze some for other customers. The Yeps bag the birds.

They sell the meat to Cambodian families in the area and other locals. It is not difficult to market the birds—in fact, Plen is unable to meet the high demand for his poultry. Many customers say his chicken is the closest to what they were able to get in Cambodia and they want to buy more. He also enjoys his chicken and believes that the way it is

Fixed Costs	Cost before Amortization	Amortization Factor[1]	Cost after Amortization
Pens (3)	$350.00	10 batches	$35.00
Direct Costs			
Chicks (300)			$245.29
Feed (for 300 birds)			$448.00
Processing			$50.00
Total Costs			$778.29
Income/ Value[2] of 206 chickens @ $6.25 each			$1287.50
Net			$509.21

[1]The fixed costs were amortized since it is assumed the items will be used for at least 10 batches.
[2]The value of birds kept for home consumption is included with the income. Any birds given away as free samples are not included as income—they are a marketing cost although not counted as such in this chart.

raised gives it the good taste he remembers from his childhood. Plen used to let the birds out of the pen to roam freely during the day, but he now keeps them confined in the pen.

Brooder setup

Plen is happy with the quality of chicks he receives from the hatchery. The brooder set-up is in a separate out-building. He has modified the building somewhat, but it will require more work for future batches, particularly electrical wiring and isolating the chicks. Now the family has 3 pens which they operate continuously spring, summer, and fall. They also keep some layers for table egg production.

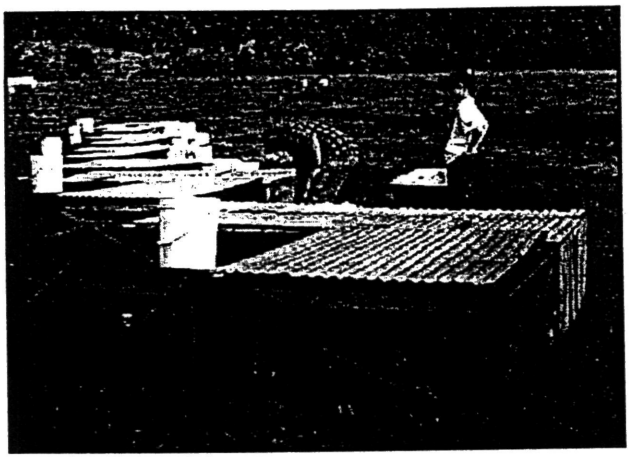
Enhancing family & community values

It is important to Plen that the farm be able to provide the family with a stable financial, social, and cultural environment, including peace of mind. Pastured poultry enhances these values because it increases the level of financial security of the farm, provides a social and cultural environment for his children, and strengthens his community. The community plays a big role in the way the chicken is raised, especially in terms of taste and preference, since the community wants chickens raised the Cambodian way.

Round-ups

Summarizing the experiences of 19 poultry producers in the South

This section discusses areas of further interest to potential or practicing producers: Mortality, brooding, weather issues, and feed. It summarizes the experiences of 19 producers: Alabama (5), Kentucky (9), Mississippi (2), and South Carolina (3), including those featured earlier in this booklet. Only first names have been used for privacy.



Mobile pens of chickens are spread out across a pasture.

The experiences described in this section represent a learning curve by beginners. For detailed how-to information on pen construction, brooding, feeding, pasture management, record-keeping, etc. please see the Resources Section. The Resource Section lists the HPI Record Book (available free of charge from ATTRA) which addresses all of these topics. The Resources Section also provides ordering information for Joel Salatin's state-of-the-art book *Pastured Poultry Profits*.

In this chapter:

Appropriate Technology Transfer for Rural Areas (ATTRA), the national sustainable agriculture information service funded by the USDA, offers free general information on sustainable chicken production. Producers can call ATTRA from 8:30 a.m-4:30 p.m. Monday-Thursday and from 8:30 a.m- 12:30 p.m Fridays at its toll-free number, 800-346-9140.

The enterprise activities (ordering of chicks, moving to them to pasture, and processing) were carried out at various times, indicating that this enterprise and its activities can be manipulated to suit the producer and scheduled to fit between peak time demands, anticipation of appropriate weather, and availability of equipment.

✔ Brooding set-ups

Time spent preparing the brooding area averaged about 4 hours.

Many participants brooded their chicks in boxes. **Theodore used a cardboard box** surrounded by chicken wire. A heat lamp provided warmth and the feeder and waterer were placed in the box. As the chicks grew, they were placed in larger and larger boxes to prevent over-crowding. **Norma brooded in a 4′ x 6′ covered cage** with 4 heat lamps. Five chicks were lost to chill before she put in sawdust. **Albert and Sheila used a "freezer box cut in half** with three lights from the top." The chicks piled up —19 were lost.

Trenton placed a box completely within a toolshed, which proved to be too busy a place. John and Angela placed their box in a mobile home and added fresh newspaper bedding every 2–3 days. They lost about 25 chicks in the brooder due to temperature problems and had to add a second heat lamp and a fan for ventilation.

Lee brooded chicks in an enclosed area of a barn. Steve and Kim also used a part of their barn, enclosing chicks in a furniture crate. They cut additional holes in the crate when they realized the chicks needed more ventilation.

Don had a friend who brooded chicks for him very successfully in industrial-style brooders. Don would eventually like to have a brooder at home, but it is not a priority.

In addition to *Pastured Poultry Profits*, there are many books available on brooding chicks. See the Resource Section to order ATTRA's *Sustainable Chicken Production Overview* which lists small-scale poultry production books.

In general, chicks were moved onto pasture at about three weeks of age.

✔ Pen construction

In this project, the costs of building the field pen varied from $40.00 to $343.00 with an average of $145.20. The time spent building the field pens averaged about 9 hours and ranged from 2 to 24 hours.

The pen is 12′ x 10′ x 2′ with a wood framework. Aluminum roofing covers three-fourths of the roof. The sides are enclosed with chicken wire with one end enclosed with aluminum roofing. A section of the roof lifts off as a door for access to the pen. The pens are moved with a dolly. The dolly is placed under one end and the farmer pulls from the other end.

Designs vary

While most participants followed a blueprint for Salatin's pen, some participants varied the structure of the pens to suit their needs—usually to move the pen more easily, to help dissipate heat, to have smaller pens, or to allow free access to the pasture.

To prevent predator problems, Steve and Kim used 2x2's instead of 1x2's to make the pen sturdier than Salatin's. Too heavy for Kim to move, wheels were added. It also has a heat lamp and a fan.

Lee did not raise 100 birds at one time, because he wasn't sure if he could process and sell that many at once. Instead he raised 2 batches of 50 birds each.

Lee built his cages smaller than Salatin's (8'x8' instead of 10'x12').

Albert and Sheila were also interested in a smaller pen due to their rough, hilly land.

Free-ranging birds

Trenton cut a hole in the pen to allow 6-week-old birds access to the outside for free-ranging. He thinks this reduces stress and plans to continue the practice with other batches; however, he lost two chickens to a fox.

Plen also let his birds out of the pen at times. He had to train his dogs not to kill the chickens (they initially killed 10). Hawks also posed a threat.

Servicing pens

The average time to service the brooder or pens was about 30 minutes per day.

There are many housing options for poultry on range, including modifications to the Salatin-style field pen. Please see the Resources Section for ordering information on range poultry housing from ATTRA.

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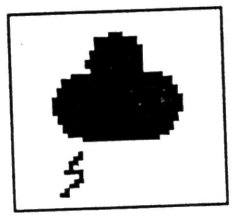
✔ Weather Issues

Salatin considers weather the biggest variable in pastured poultry production. Although the pen construction calls for covering three-fourths of it with roofing, rain can still get in. Salatin recommends spreading hay inside the pen if cold rain settles in. Sometimes it becomes necessary to cover open sides of the pen with scrap metal roofing or plywood to protect birds from strong winds. For extreme heat, Salatin recommends propping up the enclosed end of the pen to ventilate.



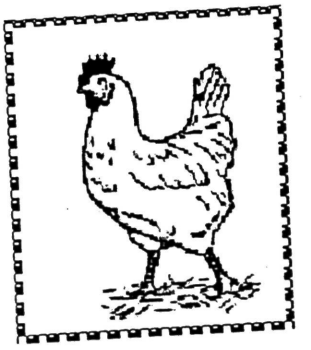
Most participants tried out their first batch during the spring or summer when the daytime temperatures were typically very hot (i.e. highs in the mid 90s and lows in the mid 70s). However, temperature swings could be dramatic. A Kentucky producer experienced temperature swings from highs of 102° to lows of 50° in the months of July and August.

In the hottest weather participants considered different ways to cool the birds down. An Alabama producer considered only putting 50 birds per pen or to use a gabled roof to reduce heat stress.

The weather was very wet for one Kentucky producer (over 6 inches of rain in June) and the ground under the pen was muddy and quickly depleted of grass. "Chicken breasts seemed to stay wet and dirty." An Alabama producer also found that the hot and rainy conditions in August significantly increased his labor since he had to check on the water supply so often.

Sudden storms were problematic throughout the growing season. One Louisiana producer lost 28 birds in April from a drastic change in weather (sudden cold temperature, thunderstorms). The pen was later modified by nailing tin onto the pen to weather proof one corner and placing hay inside the pen. A Kentucky producer lost 6 birds during a storm when they piled on top of each other. A South Carolina producer lost birds due to heavy rain and a cold night in August.

✔ Pasture management



Salatin recommends a "perennial polyculture" or a mix of perennial forages. His pastured poultry follow a cattle rotation—cattle shorten the pasture for chickens. Proper pasture management requires allowing sufficient rest time for the plants to recover after grazing.

Many participants kept other animals, but generally did not mix them with the chickens on pasture.

Theodore found it was not difficult to "keep the chickens ahead of the cows" since he control-grazed cattle in paddocks.

In Albert and Sheila's operation, cattle and sheep shared the pasture with the chickens—if the chicken feed was spilled, the cattle and sheep cleaned it up after the pen was moved.

Roosevelt found there was no problem with cattle being in the same pasture. "At first they were curious and attempted to eat from the pens. After a week the cattle ignored the pens except at feeding time." He thought the poultry enhanced the pasture for his cattle, and neighboring cattle farmers were also impressed.

MOST PARTICIPANTS MENTIONED THAT THE PASTURE QUALITY IMPROVED WHERE THE PEN HAD BEEN LOCATED. A DARK VIVID GREEN COLOR AND THICK FORAGE WAS EVIDENT UNLESS PASTURE REGROWTH WAS SLOW DUE TO DRY WEATHER OR APPROACHING FROST.

Lee kept goats in the same pasture with the chicken pens. Although the goats climbed on the pens, there was no serious problem. Goats broke through a pen at Laura and Ralph's--an A-frame roof instead of a flat roof prevents goat damage.

In general, no pasture preparation other than mowing or haying was done for the chickens. The land used had various former purposes: tobacco, hay, pasture, lawn, an old peach field, etc. Little seeding for the benefit of chickens was done.

Forages in the pasture included clover, annual lespedeza, fescue, orchardgrass, "weeds," warm season annual grasses. In the lower South, bahia, common bermudagrass, and dallisgrass were the norm. One participant seeded the area with white clover. Usually flat or gently sloping land was used, and the forage was generally 4–6" high.

One Alabama producer experienced some problems with fire ants. Laura and Ralph found small stumps in the pasture could make it difficult to move the pen--they keep one pen in a pasture area and one in a wooded area.

✔ Feeding

Overall, feed per chicken ranged from 8 to 27 lbs., with the average amount being about 14 lb. Feed cost ranged from 8 to 21 cents per lb and averaged about 15 cents per lb. Differences in amounts fed may be due to quality of the feed, the length of time the chickens were kept until slaughter, the feed efficiency of the chickens, and spillage. See Appendixes 2, 3, 4 and 5 for averages on total feed, feed per chicken, total cost and cost of feed per pound.

A strong marketing advantage of pastured poultry can be the use of a "natural," non-medicated diet. Many consumers are interested in poultry raised without routine antibiotics or unappealing by-products in the feed.

All poultry diets require a source of:

- **energy (grains—i.e. corn)**
- **protein (i.e. soybean meal or roasted soybeans)**
- **calcium (i.e. oystershell or limestone)**
- **phosphate (i.e. dicalcium phosphate)**
- **salt**
- **trace minerals and vitamins (i.e. a premix).**

Commercial vs home mix

Many participants used a non-medicated commercial ration; others had the feed mill mix custom rations; others home-mixed rations on farm. Many participants started with a commercial starter ration for brooding and then switched to a home-mixed finishing ration. One producer found that buying non-medicated commercial feed would cost him 18 cents per lb., while his local feed mill would prepare a custom ration for 12 cents per lb.

FOR INFORMATION ABOUT ORGANIC FEED SUPPLIERS OR HOME-MIXED DIETS, SEE RESOURCES SECTION OR CALL ATTRA AT 1-800-346-9140

Some producers grow their own corn and wanted to use it for the chickens. Albert and Sheila's feed ration was 85% corn on the cob with 10% soybean meal (44% protein), and 5% poultry commercial supplemental crumbs. If home-mixing rations, producers need to follow proven recipes such as Joel Salatin's or obtain proper advice from a nutritionist (many feed mills provide this service). Salatin currently uses corn, roasted soybeans, crimped oats, limestone, Fertrell Nutribalancer™ (a vitamin and mineral permix), fish meal, and kelp meal. He also adds a probiotic. However, some of Salatin's ingredients are not readily available in some areas.

By the second year of the project, all HPI field representatives supporting these farmers had access to a feed formulation program.

Foraging chickens

Many producers steer clear of animal proteins such as meat and bone meal due to consumer concerns. Producers also depend on forage to supplement the concentrate feed. Salatin estimates that the forage can provide up to 30% of the nutrient needs of pastured poultry. Trenton supplemented a commercial ration with garden greens, fresh alfalfa, and cracked corn. In the future he plans to use more alfalfa and clover cuttings.

✔ Mortality

As described in *Pastured Poultry Profits*, Joel Salatin experiences no more than 10% mortality. Only 2-3% is due to sickness--the rest is due to predators and weather. In his book, he describes many of the things that can go wrong, especially for novices.

Mortality was quite high for the first batches of the grantee farmers. The average number lost during production was 31% (see Appendices 2, 3, 4, and 5 for averages and exact numbers). Mortality was caused by damage to chicks during shipping, brooding problems, weather and temperature problems on pasture, crushing birds when moving the pens, and sometimes predation.

Temperature regulation

According to Salatin, it is important for day-old chicks to have access to 90°F temperature in the brooder. After 48 hours, the temperature can be reduced by several degrees each day until chicks are feathered at 3 weeks. It is important to avoid drafts.

The grantees experienced mortality from brooding usually due to poor temperature regulation. In addition to the stress caused by cold temperatures, chicks may pile up and smother each other trying to warm themselves.

'Curly toe' woes

One participant commented on the importance of regularly checking new chicks. "Curly toe" was a complaint especially during brooding—it is due to an unbalanced diet (the B vitamin riboflavin is deficient). Lee believes he lost 25 chicks during brooding from curly toe before he added a vitamin/mineral supplement to the water.

Major reasons for losing birds:

- ✘ Shipping problems from hatchery
- ✘ Brooding mistakes & mishaps
- ✘ Inclement weather
- ✘ Pasture problems
- ✘ Temperatures: Too hot or too cold
- ✘ Crushing birds when moving the pens
- ✘ Predation from foxes, opposums, skunks etc

Sometimes shipping the chicks through the mail was a major cause of mortality. Chicks may be injured during shipping or the shipping process may take too long.

Shipping problems

Trenton had problems with the hatchery where he purchased the chicks. They would not replace the chicks lost in shipping—27 were dead on arrival and 25 more died that first day. He plans on using a different hatchery in the future—one that is closer. Betty lost all of the 50 chicks within a few days due to being mashed during shipping and to being sent to the wrong address initially. The hatchery replaced all 50. Some pastured poultry producers are interested in hatching their own stock—"pastured

THE MOST COMMON LOSS OF CHICKENS WAS DUE TO COLD OR WET WEATHER AFFECTING THE BIRDS IN THE FIELD PENS. STORMS AND DRASTIC TEMPERATURE CHANGES WERE PROBLEMATIC THROUGHOUT THE GROWING PERIOD.

Mortality

peepers" which come from broiler breeders raised on pasture.

Moving pens & predators

Producers must learn how to move the pasture pens without injuring the birds. Lee found the chickens would run out from under the pen when he picked it up. Don sprained his ankle and several friends and his adult children helped him move the pens—they all had to learn ways to move pens without running over chicks.

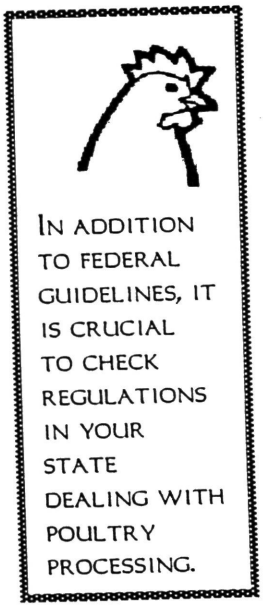
Eleven of the 19 participants who reported back reported no loss from predators at all from their first batch. However, Betty lost all but 4 chickens out of 50 to a weasel who took 8–12 nightly. Norma reported that a fox killed 18 chickens. One Alabama producer used dogs for protection since there are many predators in his area (foxes, racoons, coyotes, opossums, skunks, etc.).

Disease

Disease was very rarely reported in this project. However, other pastured poultry producers at times have reported a high loss of birds after getting wet in rainstorms. Parasitism is unlikely to be a problem since the pens are moved daily to fresh pasture. Producers in this study generally did not report parasite problems.

✔ Processing

A legal summary was prepared by the National Center for Agricultural Law Research and Information concerning the regulations for on-farm processing (see Appendix 7: Resource Section for ordering information).



IN ADDITION TO FEDERAL GUIDELINES, IT IS CRUCIAL TO CHECK REGULATIONS IN YOUR STATE DEALING WITH POULTRY PROCESSING.

There are federal exemptions provided in the Poultry Products Inspection Act that can allow farmers to process and sell a limited number of birds from their farms. The exact number, depending on the state, is never more than 20,000 birds per year; many states only allow 1000 birds per year.

In addition to USDA and state agricultural department regulations, the state and local health departments may also have regulations. After the first year of the project, the State Health Department in Kentucky indicated that processed chickens could not be sold at all in the state without USDA inspection.

HPI was concerned about food safety and committed to helping farmers process in as sanitary a fashion as possible. A food pathologist at Tuskegee University developed processing guidelines for the farmers for fly control, chilling, drainage, disinfection, hand washing, water use, etc.

HPI provided a plucker, scalder, killing cones, and delunger for processing as well as training in food safety. In the last 2 years of the project, HPI also made funds available for buying stainless steel tables.

Water issues

Participants were not entirely happy with the scalder, which sometimes had trouble keeping the water hot enough, and supplemental hot water had to be added. Also processing one bird at a time is slow. Processing equipment that can handle 4 birds at a time would speed things up. Water availability is an issue. Lee can't process with rural water. Steve and Kim are on a cistern and have to haul water in for processing.

- Butchering age averaged 9 weeks and varied from 8 weeks to 14 weeks.
- Birds generally weighed 4-5 lbs.
- Processing time averaged 36 work hours for 73 birds.

Birds are generally processed according to available labor, time, and the ability of the customer to pick up their birds. Processing also depends on the weight of birds the customer desires—from cornish hens to roasters. Butchering was often spread throughout several different days.

Pricing the birds

Price was generally on a per bird basis since most participants did not weigh the birds at processing. Some participants decided on a price that would provide them with a profit, but most charged according to what they believed their clientele would pay—generally about $6 per bird (see Appendices 2, 3, 4, and 5 for prices per bird).

Sometimes customers actually helped with the processing. Many participants bagged their chickens for the customer. Most asked customers to pick up birds on processing days, but sometimes would freeze the meat for later pick-up—sometimes it was not by choice.

Some chickens were sold live. According to one Alabama producer, "In this area, people would rather have live chickens than butchered, and they don't have to freeze them thereby losing some taste."

Processing set-up

Most participants set up processing equipment under trees or a shed. Some use a permanent building. So the processers are not standing in water, Rosa and Alvin used pallets on the floor, and water was drained out.

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SOME OF THE PARTICIPANTS WERE ALREADY SKILLED IN PROCESSING, BUT MOST HAD MUCH TO LEARN.

OTHERS OFTEN PARTICIPATED—TO TEACH, TO LEARN THEMSELVES, OR JUST TO HELP.

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Trenton set up under a large tree using branches to support loops of water hose. The set-up included killing cones and a feather picker. The scalder blew the fuses in his house so he used a small, portable burner and a large canning pot of water. A large

work area (12 feet long and 2 feet wide) was divided into three equal sections. The first (with a marble counter and sink) was the location for eviscerating carcasses and removing heads and feet. The second countertop was stainless steel and held a bucket of ice water for necks, livers, and hearts, and a bucket for gizzards. The third section (a kitchen countertop) was the final quality control area.

Main processing issues that participating farmers faced:

* Food safety
* Fly control
* Disinfection
* Worker hygiene
* Ample hot water
* Chilling procedures
* Drainage in work area
* Modern scalding, eviscerating & plucking equipment

✔ **Two producers tell about processing day**

Don's operation

Don describes his processing set-up: "Killing: With V-bolts I clamped a board to 2 steel T-posts I had driven into the ground. We hung the kill cones on the board with nails. Scalding: We heated water with propane. We had previously witnessed the inability of a 110 volt water heater to keep up with processing. Picking: We used the HPI-provided table-top type. It worked well, after a good scald, but required some skill to avoid tearing the skin, bruising, etc. Eviscerating: We used a discarded triple-tub affair as a table by laying a wide board across the top, lengthwise, and covering it with 6 mil plastic. Water was delivered through an arrangement in which three drop hoses (with cut-off at the lower end) were spaced along the table, with water running through a hose fastened to a board overhead. This board, too, was v-bolted to 2 steel T-posts driven into the ground, one at each end of the table. Chill tanks: We used new plastic garbage cans. Two liter soda-pop bottles were filled with water and frozen overnight, and this provided the chill effect."

"Problems: We found ourselves standing in water. Having water running constantly may not be a good idea. I would like to try a trigger-activated water-squirting arrangement for the eviscerating table. We found we needed to tie the chickens' feet together, in the cone, before killing to prevent their kicking themselves out of the cones. Scalding and picking seemed to be the usual bottleneck in the sequence. Mechanizing those would free up another person to eviscerate—which was the next most likely bottleneck."

Albert & Sheila's set-up

Albert and Sheila nailed a killing cone to a tree. They eviscerated on a 6-foot table with a plastic covering and a water hose with double connection—one was connected to the lung puller and the other was plain water. Three iced bowls were used for parts and two iced coolers for the dressed chicken. Three 5-gallon buckets were used for the guts, head, legs, and blood. Since they were new to processing, it took a long time to get started and they worried they weren't doing it well; however, their confidence improved with practice.

✔ Marketing

The Salatin family has developed a loyal customer base of 400 people who come directly to the farm and pick up their chicken and other products. They send out newsletters to keep customers informed about the farm and provide order forms. Customers are reminded of pick-up times to which they have committed.

Publicity efforts

Most grantees marketed by word of mouth and reported about 4 hours on marketing for their first batch of 100 birds; however, on-going work is always needed to maintain a customer base. Most sold to family, neighbors, friends, and co-workers. Usually there was a higher demand than supply. (See Appendices 2, 3, 4, and 5 for averages and numbers of birds kept for home-use, sold, or given away, along with number of customers and recipients.)

Some participants prepared flyers or advertised by radio. Free samples were used a lot. One producer gave 3 chickens as free samples to local newspaper food editors. Trenton held a potluck for 30 friends and family to sample the chicken.

Flavor sells the birds

Participants universally agreed that their chicken had a good taste, texture, and quality. John and Angela and their customers found that the chicken was very lean yet juicy. "They were very good and took less time to cook." Andrew commented: "Most of the people in the community were familiar with the old yard chicken taste. After they tasted these, they had a positive response." Albert and Sheila commented: "Any of the ways I cooked it from baked to boiled I was very happy with our chickens. Most (customers) wanted more and asked if we will raise next year."

Suggestions for publicizing (& crowing about) your pastured poultry business:

- Word of mouth (based on good client relationships)
- Brochures, fliers & other printed materials
- Newsletters (printed & electronic) to your client base
- Your own homepage on World Wide Web
- Create email chat groups with your clients
- Local radio & TV talk shows
- Newspaper feature articles
- Free & paid advertising (bulletin boards, newspaper classifieds, and radio spots.
- Roadside signs

Keeping customers happy

Don commented: "Nice comments about the chicken pot-pie at church social—provided by one of our customers. No negative comments so far. We've cooked four ourselves. I'm very pleased with the taste. I remember chicken tasted like this in the 40's—richer, deeper, than the bland supermarket fare. I urge folks to cook one at least without a lot of high seasoning—so as to taste the meat, not just the barbecue sauce. The meat is more dense; it takes less to fill me up! We noticed there was little fat under the skin, so skinning to avoid fat was unnecessary. The broth was not greasy."

✔ Labor & Earnings

EARNINGS PER HOUR FOR FARM FAMILIES PARTICIPATING IN THE INITIAL BATCH OF 100 BROILERS WERE NOT VERY HIGH. HOWEVER, MANY PARTICIPANTS SEEMED TO BE HAPPY JUST TO HAVE ACCESS TO THE HOME-RAISED CHICKEN.

AS FARMERS RAISE AND PROCESS MORE AND MORE BATCHES, PROFITS AND HOURLY EARNINGS CAN BE IMPROVED BY ECONOMIES OF SCALE. IT TAKES ONLY A LITTLE MORE TIME TO SERVICE SEVERAL PENS AS ONE PEN. MORE INPUTS CAN BE PURCHASED IN BULK (SUCH AS FEED). ALSO, AS POULTRY GROWERS LEARN ABOUT THE ENTERPRISE, THE JOB GETS EASIER. THEY WILL REQUIRE LESS TIME TO PERFORM ACTIVITIES AND HAVE MORE KNOWLEDGE WHICH THEY CAN LEVERAGE.

It seemed difficult for the participants to maintain records of their efforts, although record-keeping is an important part of evaluating an enterprise. About one-half of the grantees did not turn in their record books. Some participants, however, have continued to use the HPI record book as a tool in their enterprises. (Please see the Resources section to order a record book.)

Economic summaries

For a summary of all the actual income and expenses, labor budgets, and hourly earnings from each participant who turned in a record book, please see the charts in the Appendices 3, 4, and 5 (also called "Summaries of Production Figures for 1996, 1997, and 1998"). Appendix 2 provides averages. Please note in these Appendices that the production numbers do not always add up—the only information available was that provided by the farmers themselves.

For a more general estimate of income, expenses and labor in the Pastured Poultry Project, see "An Estimated Income/Expense Analysis per Batch of 100 Broilers" in Appendix 1. This analysis was created by HPI's Appalachia Program Manager Steve Muntz who has much experience in training producers and raises pastured poultry himself.

The analysis includes the actual cost of processing equipment (subsidized for the grantee farmers by HPI in the other economic analyses). It shows that it is possible to make a small profit on a batch of 100 broilers even when paying for processing equipment, if conditions described in the analysis are met.

Major costs

Major costs include fixed costs: pen construction, brooder construction, heat lamps, feeders, waterers, and processing equipment. These costs could vary greatly. For example, some participants used scrap material from their farm to build the pen; others bought new material. Processing equipment in this project was provided by HPI, but most other pastured poultry producers must expect an investment of about $1000 in equipment. Fixed costs can be amortized over their expected lifetime.

✔ Labor & Earnings

Direct costs are incurred with every batch of chickens. These include feed, the cost of chicks, shavings for the brooder, ice for processing, bags, ties, utilities (water, electrical, telephone), and postage. Marketing costs also include the chickens given away as free samples, although this cost is not included in the appendix charts.

Labor per 100 birds

Total labor hours to build one pen, brood chicks, raise chickens on pasture, slaughter, and market range from a low of 45 to a high of 132 hours (average was 87 hours). Labor was generally provided by the participant plus family—children were usually involved. Processing usually brings in extra help such as friends, neighbors, and sometimes customers. At times prior grant recipients helped, along with HPI Field Representatives or Extension agents. Sometimes participants paired up.

Labor considerations include initial work such as learning, training, gathering information on feed supply, hatcheries, processing equipment, building the pen and brooder, and building a customer base. Work that is needed with each batch is brooding, servicing pens, reminding customers of pick-up days, processing, and clean-up. Please see Appendix 1: An Estimated Income/Expense Analysis per Batch of 100 Broilers for detailed labor considerations.

✔ Quality of life

Participants listed a number of benefits from raising pastured poultry. This alternative enterprise fits with their desire to live on the farm and be self-sufficient and self-directed, to raise their own good quality food including vegetables, and know the inputs used. Some participants wanted an "organic" product for health reasons.

WHAT JOHN AND ANGELA VALUE MOST ABOUT FARM LIFE IS "BEING OUT IN THE COUNTRY AIR, WATCHING THE CROPS AND ANIMALS GROW, BEING IN GOOD HEALTH, AND ABLE TO LIVE AND GROW MY OWN FOOD ON THE FARM."

Albert and Sheila value "caring for livestock and watching it renew itself". Gregory values "eating good quality food—'chemical-free' means long and healthy life."

Some participants value the control over food products. Steve and Kim value the "ability to control or help change my life and family future." Betty commented: "It is so good when you can raise your own chicken. Then you know what you are eating." Abdul and Hafeeza value "being able to grow our own food and animals. By doing so, we make our quality of life better because we know exactly what we are eating. It gives us a sense of well-being."

Don commented: "We value a self-directed way to life, with free time to develop ourselves

physically, educationally, socially, and spiritually. We expect to derive profit from livestock and crops. Pastured poultry gives one more—apparently profitable!—use of the grassland. The labor was gentle and not exhausting. Tending the birds did not take an excessive amount of time. The only problems were those confronted by anyone who raises animals of any sort. Yes, we were 'tied down' to the farm somewhat, but we discovered that our sons were taking an interest in the project—also my brother-in-law who presently lives on the place—and moving and feeding were simple enough and quick enough that when we were away someone or a combination of these people could handle it for us over a long weekend with no problem."

Teresa Salatin waits on customers who line up to buy some freshly processed pastured poultry.

Opportunity for youth

Roosevelt says that pastured poultry has potential to provide a diversion to troubled youth who are tempted into drug and alcohol use in a community with few jobs or activities for youth, as well as a source of income. "There is a real pleasure in knowing I am eating something that I have raised and there is the assurance that I am providing quality products in the community. I have some young family members 9–14 years of age that are learning how to raise some of their food and finding it better than fast food. It has taught the young ones the value of having chores to do and prepares them for other things in life. It starts a work ethic." Pastured poultry will be used in Roosevelt's local Community Summer Enrichment Program, a program which provides activities to children during summer.

Strengthening communities

Don believes that community life in his area could be improved by pastured poultry production. "What would otherwise simply be 'consumers' become 'customers'—people you know—and those become friends. Knowing more people in this way engenders a sense of wider community. Coming to the farm also provides an opportunity to talk about mutual concerns: you get started on food concerns and branch out from there."

MANY THOUGHT THAT PASTURED POULTRY ENTERPRISES COULD IMPROVE COMMUNITY LIFE. FAMILY AND COMMUNITY MEMBERS HELP BY MOVING PENS, PROCESSING, AND WORD OF MOUTH MARKETING.

ACCORDING TO TRENTON, "THIS WAS DEFINITELY A COMMUNITY PROJECT WITH NEIGHBORS AND FAMILY CHECKING THE GROWTH OF THE CHICKENS. NOBODY BELIEVED THEY WOULD GROW SO FAST!"

✔ Follow-up

Fifteen of the 19 grantees who reported back continue to raise pastured poultry. There are also 11 more families who were grantees who did not file reports who continue to raise pastured poultry. Eight of the 35 producers who received grants from HPI to try pastured poultry have not continued with the enterprise.

Norma commented: "It was a big job to move the pens every day—they were very heavy, but I do think this is a good way to raise chickens. I don't know if I will try it again next year. I'll have to think on this."

MOST PARTICIPANTS PLAN TO RAISE MORE BIRDS IN THE FUTURE FOR HOME USE AND OUTSIDE SALES. SOME ADDED EGG PRODUCTION TO THEIR MARKETING PLANS.

Albert and Sheila plan on raising more in the future. "This year we plan on at least 200 chickens. Because most people, once they tasted our chicken, placed orders for more." Ben planned to mentor a youth in pastured poultry.

Roosevelt hopes the community effort will eventually combine well with a greenhouse program to result in a Farmers Market. He will help fund the community project and help the youth.

According to Don, "The project has been *almost fun* the whole way along—one of the few agricultural enterprises I've tried that I can say that of. Yes, we'll try it again next year. I think we'll make the big jump and try 3 sets of 100 each."

Appendices

Appendix 1
Estimated Income/Expense Analysis per Batch of 100 Broilers:
(Created by Steve Muntz, HPI's Appalachia Program Manager)

Income

Sell 80 birds @ $7.00 each	$560.00
Eat 10 birds @ $7.00	$ 70.00
Assume 10% death loss	
Fertilizer and compost value	$ 30.00
Total Income	$660.00

Expenses

	Cost before Amortization	Amortization factor	Cost after amortization
Fixed:			
Brooder	$50.00	10 batches	$5.00
Brooder waterer/feeder	$17.00	10 batches	$1.70
Pen/feeder/waterer (lumber, hardware, chicken wire, roofing)	$180.00	10 batches	$ 18.00
Heat lamp	$10.00	10 batches	$ 1.00
Processing equipment	$1000.00	50 batches	$ 20.00
Direct:			
Feed 1500 lb. @ .12/lb			$180.00
100 chicks @ $.77 (incl. Freight)			$ 77.00
Wood shavings for brooder			$ 10.00
Bags and ties @ $.08			$ 7.20
Marketing/postage			$ 15.00
Utilities/misc. supplies			$ 10.00
Total Expenses			$344.90
Net			$315.10

Labor considerations

INITIAL LABOR:

- ✔Brain work
  - ✧ Training/reading, gather information on feed supply, hatcheries, processing equipment, make purchases or borrow, order chicks
- ✔Build pen
- ✔Build brooder
- ✔Start building customer base (advertise, talks, telephone)

ON-GOING LABOR:

- ✔Set up brooder
- ✔Brood chicks for 2 weeks
- ✔Mow pasture
- ✔Move chicks to pastured pens
- ✔Move pens daily, feed, and water (1/2 hour per day)
- ✔Send out reminder cards or call customers a few days before processing
- ✔Preparation for processing (setting up tables, killing cones, water/electrical supply, plucker, scalder, chill tanks, ice, bags, ties, giblet bags, buckets for guts and blood, compost preparation, disinfecting surfaces)
- ✔Gather chickens from pens
- ✔Process (at least 8-10 hours for 3-4 workers processing one bird at a time)
- ✔Sales
- ✔Clean up

An estimate is 80 hours to build one pen, brood chicks, raise chickens on pasture, slaughter, and market.

Appendix 2
HPI PASTURED POULTRY PRODUCERS
Average production figures[1]

Age onto pasture (weeks)	3
Age at slaughter (weeks)	9
Number slaughtered	73
Number sold	44
Number kept for freezer	20
Number given away	7
Number of customers/recipients	15
Number lost during production	31
Price per bird (4-5 lbs.)	$5.06
Total feed (lbs.)	1056
Feed/chicken (lbs.)	13
Feed cost per lb.	15 cents
Pen costs[2]	$14.52
Feed costs	$147.14
Chick costs	$69.42
Other	$26.77
Total costs	$254.92
Income/value[3]	$317.97
Net	$58.19
Hours of labor	87
Hourly earnings	$1.26

[1]Averages are based only on producers raising batches of 100 broilers for ease of comparison.
[2]Pen costs were amortized for 10 batches.
[3]The value of birds kept for home consumption is included with the income. Any birds given away as free samples are not included as income—they are a marketing costs although not counted as such in this chart.

Appendix 3
HPI PASTURED POULTRY PRODUCERS
Summary of 1996 production figures

Producer code	1M	2M	3M	4M	5M	1P	2P[1]	1B	3B
No. of chickens in batch	100	100	100	100	50	100	200	100	100
Age onto pasture (weeks)	3, 4½	3	3	3½	2	2½	4	3	3
Age at slaughter (weeks)	9,10	8	9, 10	10, 10½	8	9	10	8	8
Number slaughtered	69	75	88	83	50	61	140	94	85
Number sold	52	35	25	50	35[5]	47	146	64	0
Number kept for freezer	17	40	42	15	9	14	25[2]	16	3
Number given away	0	0	21	16	8	0	0	10	0
Number of customers/recipients	13	2	31	Unknown	15	25	16	21	0
Number lost during production	36	25	17	17	0	33	5	6	15
Price per bird (4-5 lbs.)	$5.50	$6.00	$6.00	$5.00	$5.00	$4.50	$4.25	$4.47	$5.00
Total feed (lbs.)	1087	790	1244	1230	650	888	1550	900	1050
Feed (pounds per bird)	16	10	14	15	13	15	8	10	12
Feed cost (cents per pound)	12¢	15¢	13¢	10¢	16¢	15¢	13¢	18¢	16¢
Pen costs[3]	$10.57	$26.32	$13.61	$8.35	Unknown	$20.00	$7.40	$12.18	$15.00
Feed costs	$134.47	$129.46	$166.58	$128.70	102.24	$133.25	$200.44	$161.90	$167.25
Chick costs	$83.00	$73.00	$53.00	$72.00	32.50	$74.00	$141.50	$48.00	$48.00
Other	$22.05	$50.49	$27.30	$7.12	Unknown	0	0	$47.67	$35.88
Total costs	$250.09	$279.27	$260.49	$216.17	Unknown	$227.25	$349.34	$269.75	$266.13
Income/value[4]	$379.50	$450.00	$414.00	$325.00	$216.00	$396.00	$834.00	$314.11	$15.00
Net	$129.42	$170.73	$153.51	$108.83	Unknown	$168.75	$484.66	$44.36	-$251.13
Hours of labor	65½	126½	84½	57	55	45	65	115.50	131.75
Hourly earnings	$1.98	$1.35	$1.82	$1.91	Unknown	$3.75	$7.46	$0.38	Negative

[1]Two farmers pooled to raised their batches together.
[2]50 additional birds were kept for layers
[3]Pen costs were amortized for 10 batches
[4]"Value" refers to the value of birds kept for home use. The value of the free samples is not included.
[5]Two birds were sold live

Appendix 4
HPI PASTURED POULTRY PRODUCERS
Summary of 1997 production figures

Producer code	6M	7M	8M	9M	10M
Number of chickens in batch	300	100	100	100	100
Age onto pasture (weeks)	5	2 ½	2	3	2 ½
Age at slaughter (weeks)	12	14	8	8 ½	7 ½ -9 ½
Number slaughtered	190	Unknown	36	50	75
Number sold	190[1]	50	0	60	60
Number kept for freezer	20	30	27	20	15
Number given away	10	0	9	0	0
Number of customers/recipients	Unknown	22	Unknown	20	8
Number lost during production	57	20	65 (in shipping)	25	25
Price per bird (4-5 lbs)	$6.25/$4.50	$3-3.50	$5.00	$5.00	$5.00
Total feed (lbs.)	3050	1000	400	900	2000
Feed/chicken (lbs.)	14	12.5	11	11	27
Feed cost per lb.	15 cents	9 cents	20 cents	21 cents	8 cents
Pen costs[2]	$35.00	$11.50	Unknown	$9.89	$4.00
Feed costs	$448.00	$99.69	$81.75	$188.07	$169.50
Chick costs	$245.29	$87.00	$52.65	$56.00	$65.00
Other	$50.00	$25.00	$9.20	$4.50	$4.20
Total costs	$778.29	$223.19	Unknown	$258.46	$242.70
Income/value[3]	$1225.00	$255.00	$135.00	$400.00	$300
Net	$446.71	$31.81	Unknown	$141.54	$57.30
Hours of labor	Unknown	70.5	86.75	95.25	79.50
Hourly earnings	Unknown	$0.45	Unknown	$1.49	$0.72

[1]30 birds were sold live.

[2]Pen costs were amortized for 10 batches

[3]"Value" refers to the value of birds kept for home use. The value of the free samples is not included.

Appendix 5
HPI PASTURED POULTRY PRODUCERS
Summary of 1998 production figures

Producer code	1K	2K	11M	12M	13M
No. of chickens in batch	50	29	100	100	50
Age onto pasture (weeks)	1	2	3	Unknown	Unknown
Age at slaughter (weeks)	8	Sold live at 6, 7, 8, 11 weeks	9	N/A	Unknown
Number slaughtered	50	0	86	N/A	4
Number sold	43	22 live	43	N/A	0
Number kept for freezer	2	4	4	N/A	4
Number given away	5	0	25	N/A	0
Number of customers/recipients	9	11	9	N/A	0
Number lost during production	2	3	15	100	46
Price per bird (4-5 lbs.)	$5.00	$3-4.00	$6.00	N/A	N/A
Total feed (lbs.)	Unknown	250	1183	N/A	Unknown
Feed/chicken (lbs.)	Unknown	9.6	13	N/A	Unknown
Feed cost per lb.	Unknown	14 cents	17 cents	Unknown	Unknown
Pen costs[1]	Unknown	$7.60	$34.30	$8.48	Unknown
Feed costs	$127.80	$34.92	$205.05	Unknown	Unknown
Chick costs	Unknown	Unknown	$94.85	$95.95	Unknown
Other	Unknown	Unknown	$87.79	Unknown	Unknown
Total costs	Unknown	Unknown	$421.99	Unknown	Unknown
Income/value[2]	$250.00	$110.50	$432.00	N/A	$20.00
Net	Unknown	Unknown	$10.01	N/A	Unknown
Hours of labor	Unknown	Unknown	Unknown	N/A	Unknown
Hourly earnings	Unknown	Unknown	Unknown	N/A	Unknown

[1] Pen costs were amortized for 10 batches

[2] "Value" refers to the value of birds kept for home use. The value of the free samples is not included.

Appendix 6
Resources

Salatin, Joel. 1999. Pastured Poultry Profits: Net $25,000 in 6 Months on 20 A cres. Polyface, Inc., Swoope, VA. Order from:

Stockman Grass Farmer
P.O. Box 2300
Ridgeland, MS 39158
1-800-748-9808
Book ($30 plus shipping & handling)
Video ($50)

American Pastured Poultry Producers Association (APPPA)
5207 70th Street
Chippewa Falls, WI 54729
715-723-2293
APPPA_Grit@yahoo.com
Contact: Diane Kaufmann
Membership: $20 per year

ATTRA materials...Dial 1-800-346-9140:

- *Sustainable Chicken Production Overview*
- *Range poultry housing*
- *List of Organic Livestock Feed Suppliers*
- *Legal Issues for Small Farm Pastured Poultry Producers*
- *Pastured Poultry Experiences: The Results of a Survey*
- *HPI Pastured Poultry Record Book (also includes the two preceding materials)*

Internet resources:

http:metablab.unc.edu/farming-connection/grazing/pastpoul/resource.htm

PasturePoultry listserver at www.onelist.com

Dom_Bird listserver at www.eGroups.com

Final Project Report from HPI for SARE grant #LS96-76. Order from:

Heifer Project International
USA/Canada Program
1015 Louisiana Street
Little Rock, AR 72202-3815
501-907-2600

Appendix 7
List of Project Coordinators:

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PLEASE SEE NEXT PAGE

Appendix 7
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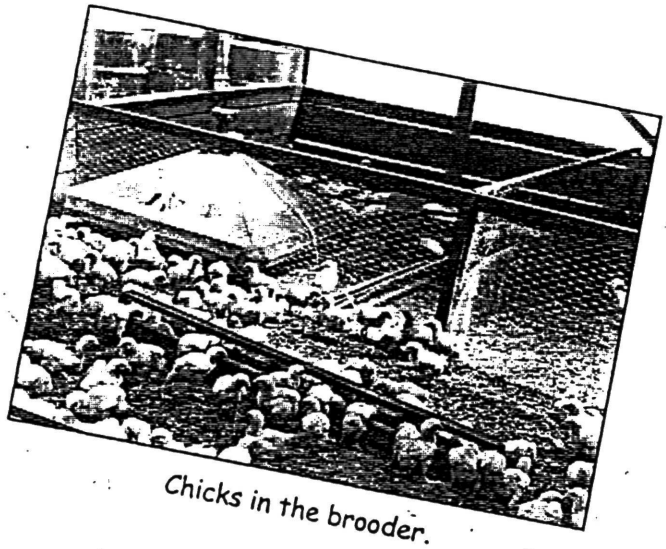
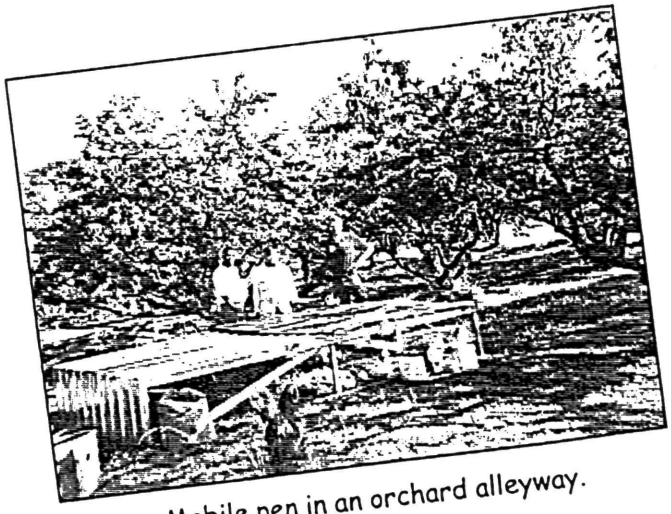
Joel, Teresa, Daniel, and Rachel Salatin
Polyface Farm
Rt. 1, Box 281
Swoope, VA 24479
540-885-3590

The family's prized rooster.



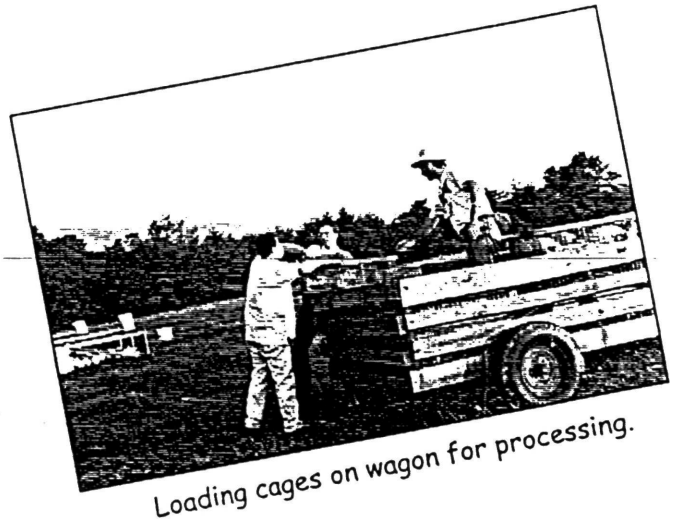
Chicks in the brooder.



Mobile pen in an orchard alleyway.

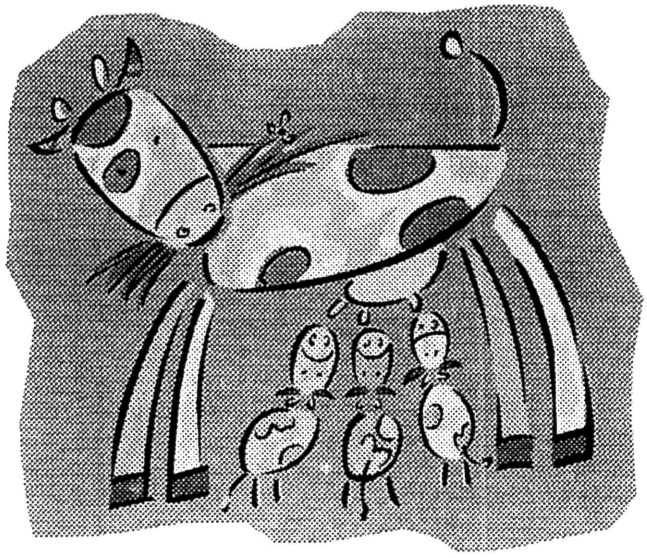
Using the mechanical plucker.

A final bath.



Loading cages on wagon for processing.

Grass-Based Livestock



Multispecies Grazing

Current Topic

Appropriate Technology Transfer for Rural Areas (ATTRA)
P.O. Box 3657
Fayetteville, AR 72702
Phone: 1-800-346-9140 --- FAX: (501) 442-9842

Prepared by Linda Coffey
ATTRA Program Specialist
June 2001

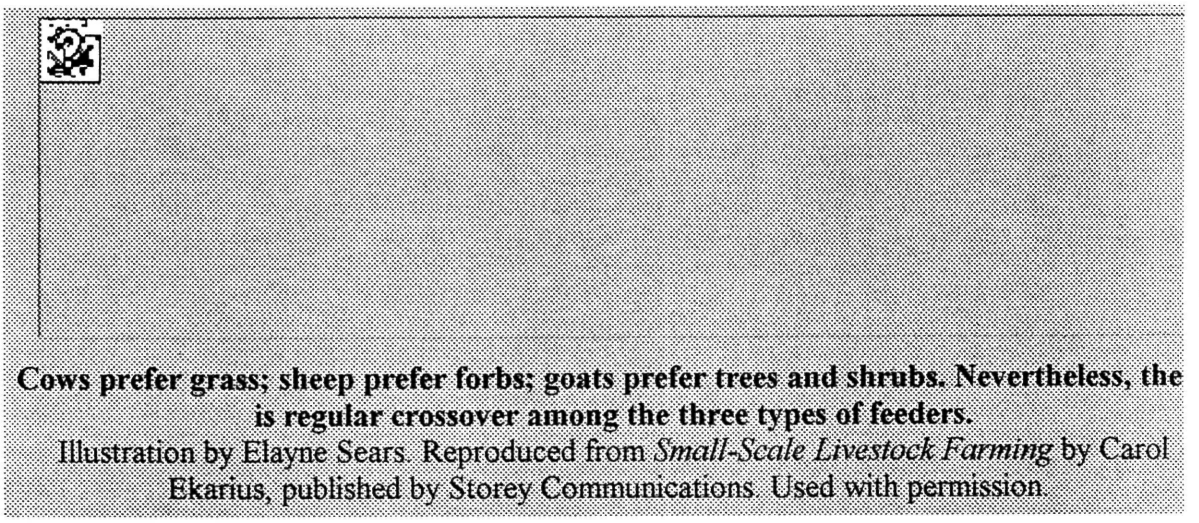
Benefits of Multispecies Grazing

Mixed-species grazing has several advantages. Cattle prefer grass over other types of plants, and are less selective when grazing than sheep or goats. Sheep and goats, on the other hand, are much more likely to eat weeds. Sheep prefer forbs (broad-leaved plants) to grass, and goats have a preference for browsing on brush and shrubs, and then broad-leaved weeds. Therefore, grazing cattle, sheep, and goats together on a diverse pasture should result in all types of plants being eaten, thus controlling weeds and brush, while yielding more pounds of gain per acre compared to single-species grazing. (1).

The addition of goats to cattle pastures has been shown to benefit the cattle by reducing browse plants and broad-leaved weeds. This permits more grass growth. Goats will control blackberry brambles, multiflora rose, honeysuckle, and many other troublesome plants (2). It is thought that you can add one goat per cow to a pasture without any reduction in cattle performance, and with time the weedy species will be controlled so that total carrying capacity is improved. This is a cheap way of renovating pastures, and you can sell the extra goats and kids for a profit, as well. The same principle holds for sheep. Although they are less likely to clean up woody plants, sheep are quite effective at controlling other weeds, with proper stocking pressure.

Multispecies grazing may also benefit pastures that are less diverse, by encouraging more even grazing. Cattle will tend to graze taller grasses that sheep may reject. It has been shown that sheep graze near cattle manure deposits, which cattle avoid (3); this too results in more even use of the pasture. Carrying capacity and pasture productivity

are improved, and animal gains are also increased (4, 5, 6). Diversification of species results in diversification of income sources (7). Also, some researchers have found that adding cattle to a sheep flock may help reduce predation losses, after a period of bonding (8).



Cows prefer grass; sheep prefer forbs; goats prefer trees and shrubs. Nevertheless, the is regular crossover among the three types of feeders.
Illustration by Elayne Sears. Reproduced from *Small-Scale Livestock Farming* by Carol Ekarius, published by Storey Communications. Used with permission.

Another way that multispecies grazing can improve pasture and animal production is through the consumption of poisonous plants by a species that is not harmed by the toxins. For example, leafy spurge and larkspur-serious problems in the western states-are harmful to cattle, but not to sheep. Therefore, using sheep to eliminate those plants will result in more useable and safe pasture for cattle (9). Conversely, some plants are problematic for sheep, but easily tolerated by cattle (10).

Parasites are a major concern with sheep and goats, under any system. Worm eggs are deposited on the pasture in the manure; the eggs hatch and larvae are consumed by grazing animals. If left untreated, concentrations of parasites will increase with time as this cycle is repeated. Higher concentrations of animals on a pasture may tend to magnify the infestation. Parasites are species-specific; that is, cattle parasites affect cattle, and not sheep, while sheep parasites affect sheep but not cattle. The cattle act as "vacuum cleaners", ingesting the sheep worm larvae, and preventing them from affecting the sheep. This is most helpful when sheep and cattle follow each other in a grazing system. However, goats and sheep do share parasites, and therefore grazing them together does not improve parasite control.

Because parasite eggs are deposited in the manure, and larvae only travel a short distance up grass blades, animals grazing taller forages (well above ground level) will not consume worm eggs or larvae. Therefore, goats that are given ample browse will be much less likely to become infested with parasites. If goats are forced to graze at ground level, however, the goats may acquire a serious parasite load.

Potential Problems

Problems may arise in the practice of mixed-species grazing. One of these is the potential for "bully" animals. In my experience on our own farm, the problem with mixing cattle and sheep was not the cattle being abusive to the sheep, but the ram being aggressive to the cattle! We had a big Charolais cow that the ram disliked so

much, we had to feed her separately in the wintertime. The ram would chase the cattle on pasture, and prevent them from coming to the water trough. At lambing time, some cattle may be difficult and bothersome to the sheep, or the shepherd!

Another problem is supplemental feeding, including the feeding of trace minerals. The mineral supplement that is adequate for sheep may not be so for cattle, and a mineral supplement that is best for cattle may be toxic to sheep, as sheep do not tolerate much copper. This difficulty, and the one of aggressive animals, may be overcome by simply rotating the animals. If the sheep are grazed for a few days, then moved to a fresh pasture and the next species put on the first pasture, you may get the benefits to your pasture and avoid these problems.

Fencing is another issue to consider. Electric fencing is generally considered to be the most economical and convenient. Opinions vary as to number of strands needed: on our farm, we use 5 strands for the perimeter, and 2 or 3 strands for the division fences. We also have a powerful charger; but if sheep get in the habit of going through the fence, it's very hard to cure them. Goats are notoriously hard to contain in an area. The article, "How to Hotwire a Goat" gives one example of a fence that may control goats (11).

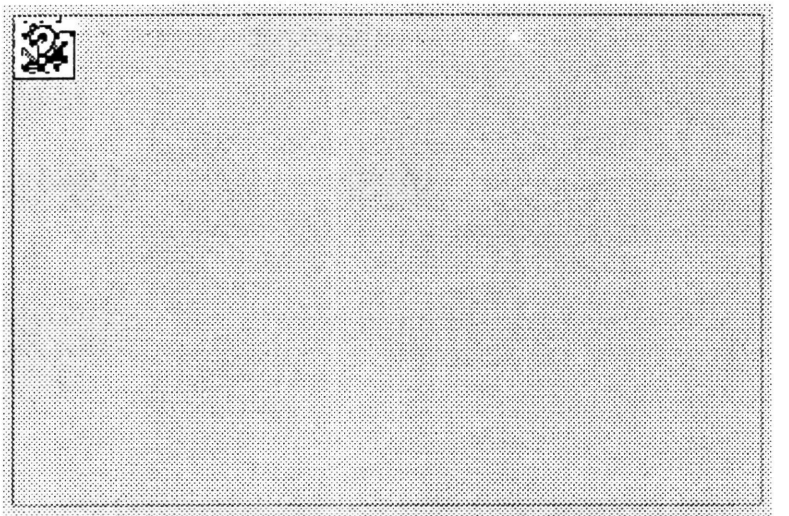
Another idea, if cattle fence is already in place, is to string off-set wires inside the fence. This should be set in about 8", and be 12-14" above ground, and must be maintained at 4,500 volts or better to be effective (12). Also, it is a good idea to train sheep or goats to electric fence. This is done by confining them in a small area with a very powerful fence, and encouraging the animals to "test" the fence by attaching shiny objects to the fence, or by placing feed on the other side of the fence, just out of reach. For best results, the training area should be surrounded by secure fencing, such as panels or woven wire or a board fence. This practice will discourage those individuals inclined to lunge forward or run through the fence after being shocked. Please refer to the ATTRA publication, ***Introduction to Fencing and Paddock Design***, for more information regarding fencing.

Predators are a major problem for sheep and goats. Electric fencing helps to discourage predators, but it may also be necessary to employ a guardian animal. Some producers prefer livestock guardian dogs, such as the Great Pyrenees or the Anatolian dogs, while others are strong proponents of llamas or donkeys. Each has its advantages and disadvantages. More information on predator control is available from ATTRA.

Obstacles to Adoption

A review of the literature on multispecies grazing included the proceedings from the Multispecies Grazing Conference, held at Winrock International in 1985 (22). Dr. Evert K. Byington submitted an article (13) which explored the question of what areas of the eastern United States could most benefit from the practice of multispecies grazing. Criteria included the number of cattle, types of pastures, availability of farmer-owned forested land for grazing, and other factors (see map). Certainly, multispecies grazing seems to be an excellent practice, with potential to improve pastures and land, and increase profits. So why is it still not a common practice, even

16 years after the conference?



Locations in the eastern United States where multispecies grazing management should be given priority as an alternative to existing forage/livestock systems.
(Byington, Evert K. 1985. Opportunities to increase multispecies grazing in the eastern United States. In: Proceedings of a conference on multispecies grazing. June 25-28. Winrock International, Morrilton, AR. p. 24.)

Knowledge may be the main factor. The decline in sheep production means that many farmers have no experience with sheep, and so may not be confident of their ability to manage that species. Learning to raise a new species takes time and energy, and inevitably involves "trial and error," which can be terribly discouraging to a beginner. Prejudice against sheep and goats may prevent a cattleman from diversifying. Time and energy are factors, as well, since sheep and goats may increase the labor demand. Practical concerns such as those already listed-predators, parasites, supplemental feeding, fences, and facilities-may inhibit farmers. Some producers may decide that they'd prefer using a bulldozer or Roundup™ to control their weedy and brushy pastures rather than "mess with sheep or goats". Lack of markets, or lack of knowledge of markets, may be an issue in some areas, as well.

On our small farm, we kept sheep and cattle together for a while. We eventually sold the cattle, for several reasons. First of all, we found it inconvenient to hire a trucker whenever we needed to sell a calf or take an animal to the veterinarian. We could not justify installing handling facilities for the small number of cows we needed to work, so anytime they needed to be vaccinated or dehorned, we had to arrange for hauling to the veterinarian. With no facilities, A.I. would be rather difficult, but keeping a bull for three cows was impractical. We could have chosen to buy calves rather than keep breeding stock, and that would simplify the management of the cattle since we would not have to worry about arranging for breeding, and would only need to hire hauling when we were ready to sell the calves. Our experience illustrates some potential difficulties for small producers.

Outlook

What results can be expected from multispecies grazing? Research techniques vary, and differences in initial pasture composition, climate, experimental procedure, and particularly stocking rate, influence results. These and other variables may account for the varying and contradictory results reported in the literature. For example, lamb

gains are improved under multispecies grazing systems, while calf gains are not affected (5) or are reduced (14) or are improved (4). A producer must be observant, and manage the pastures and animals well to maximize production and prevent damage through overgrazing. Also, it is important to think "long-term"-and give pastures time to improve and enhance animal performance. When adding a new animal species to your operation, start with small numbers and build slowly after gaining experience and adapting species to one another. This will greatly reduce risk during the learning process.

In conclusion, while multispecies grazing requires more thought and management, and more investment in facilities, it can have big payoffs for your pasture and your wallet. If you do decide to add one or more species to your operation, be sure to investigate your market options and your fencing options, and then start slowly. Select healthy stock, and be observant. Please contact ATTRA if you need more specific information.

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Resources

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Sustainable Goat Production: Overview

Current Topic

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The goat was one of the first animals to be domesticated by humans (about 9,000 years ago). There are about 200 different breeds of goats, producing a variety of products, including milk, meat, and fiber (mohair and cashmere). Worldwide, goat meat production is higher than meat production from cattle and hogs (1).

Goat production can be a valuable part of a sustainable farm. Integration of livestock into the farm system can increase economic and environmental benefits and diversity, thereby making important contributions to the farm's sustainability. Goats may fit well into the biological and economic niches in a farm operation that otherwise go untapped. They can be incorporated into existing grazing operations with sheep and cattle. Goats can also be used for control of weeds and brush to help utilize a pasture's diversity, as long as they are not allowed to overgraze.

Soil losses associated with erodible land used for row crops decline when such land is converted to pasture. Rotating row crops and pasture every one or two years offers both fertility and pest control advantages. Goats eat the forages, the goats' waste replaces some purchased fertilizers, and the life cycles of various crop and animal pests are interrupted. Like other ruminant animals, goats are able to convert plant material that is unsuitable for human consumption into high-quality animal products including milk, meat, and fiber.

Raising Goats on Pasture

Related ATTRA publications
Sustainable Goat Production: Meat Goats
Sustainable Goat Production: Dairy Goats
Sustainable Goat Production: Cashmere Goats
Sustainable Goat Production: Mohair Goats

Contrary to the popular image of goats thriving on tin cans, they actually require a more nutritious diet than do other ruminants. Their shorter digestive system does not retain food for as long, and thus does not absorb the nutrients as fully. Quicker digestion allows them to eat larger quantities of food, which helps to make up for this, but it's their unique grazing behavior that really enables goats to thrive. With their small mouths and prehensile lips, grazing goats are able to select the highly nutritious parts of plants and leave parts that are less nutritious. This gives them an advantage over cattle, who graze by taking large mouthfuls; within that large mouthful there might be a great quantity of poor-quality forage, including dead materials.

Each goat is able to eat up to 3 lbs. of dry matter daily. In order to consume that amount, however, goats must be pastured in an area with a large quantity of available forage. Goats' intake of food, and thus of nutrients, declines rapidly when they are moved to poor pastures.

Goats prefer browsing (eating plant material above eye level), but will also graze (eat grasses). Goats are known to stand on their hind legs to reach desirable leaves and brush. Since the preferred forages of goats, cattle, and sheep are different, in many pasture situations they are not in competition for the same plant material. Therefore, they can be managed quite successfully in a multispecies grazing system, allowing the same land to be more fully utilized and generate more income. Land grazed by both goats and cattle returns 25% more than land grazed only by cattle (1).

The addition of goats to a grazing system can have weed control benefits. They will eat such weeds as leafy spurge, multiflora rose, and brambles-decreasing the need for commercial herbicides. They also browse tree leaves and bark, pine needles, etc. Meat and fiber goats are particularly useful for brush control. This characteristic makes it imperative that valuable trees are protected in some way, as a goat will relish a prize fruit tree as well.

Controlled Grazing

In addition to browse, goats eat pasture forage such as grasses and legumes. A common type of grazing in the U.S. is continuous grazing, characterized by animals having unrestricted access to a pasture throughout the season. However, feeding goats in a sustainable and economical way can best be accomplished through a controlled, rotationally grazed system, also known as management intensive grazing (MIG, commonly pronounced "mig"). These systems have been used extensively with cattle, less with sheep. There has not been much work done with goats using MIG.

The basic principle of MIG is to allow animals to graze for a limited time and then move to another pasture subdivision. The plants are allowed time to grow back without using up root reserves. Even brush will need a recovery time if it is being used as forage for goats. Otherwise, the goats can kill it through selective browsing. Under

MIG, legumes and native grasses may reappear in pastures, and producers often report that the plant community becomes more diverse. Management intensive grazing can be used to improve pasture, extend the grazing season, and enable the producer to provide higher quality forage at a lower cost with fewer inputs. It does require increased management skill, and adequate fencing and watering facilities.

The goal of MIG is to adjust the size of the paddocks to the number of goats, so that each paddock provides the quality and quantity of forage needed for the amount of time desired. The time a herd remains in a paddock will vary from one day to a week, depending on the intensity of management, time of year, and stage of growth of the forage. When first devising a grazing plan, make big paddocks and use long rotations. As producers become more familiar with the pasture plants and goats' grazing habits, they will subdivide paddocks with more electric fence. It is best to make the subdivisions temporary, in order to take advantage of growing conditions and the goats' changing feed requirements.

Fencing is the most critical factor in raising goats on pasture. There is nothing more frustrating than to have to constantly chase goats back over the fence. Fencing will also be the greatest expense other than the initial cost of animals. The best permanent fencing is 4-foot woven wire with barbed wire along the top. Some graziers are also successfully using 4 or 5 strands of hi-tensile electric wire. Goats may have to be trained to this wire by placing them in a small paddock to "test" the wire. The same number of strands will need to be used for cross-fencing the paddocks. Electric netting is also available for use as temporary or permanent fencing in management intensive grazing systems; however, several goat producers have lost animals when goats have gotten their horns tangled in the netting.

Fresh, clean water must always be available. In a MIG system, the animals either have access to a central water source from every paddock, or water is provided separately to each pasture subdivision. This can be a challenge and requires another capital expense. Feed intake will go down more with goats than with cattle or sheep if clean water is not always available.

Predators are a problem in most areas where goats are produced. Please call ATTRA to request information on predator control using guard animals, such as dogs, donkeys, or llamas.

Please refer to the following ATTRA materials for information on pastures and grazing:

Assessing the Pasture Soil Resource
Nutrient Cycling in Pastures
Introduction to Paddock Design and Fencing-Water Systems for Controlled Grazing
Matching Livestock and Forage Resources in Controlled Grazing
Meeting the Nutritional Needs of Ruminants on Pasture
Sustainable Pasture Management
Grass-Based and Seasonal Dairying
Rotational Grazing

Multispecies Grazing

In some operations-particularly dairies-goats are raised in confinement, with all feed brought to them. However, allowing goats to harvest their own feed by grazing can lower feeding costs by reducing the need for purchased grain, eliminate machinery costs for harvesting, and lower fertilizer expenses since nutrients are returned to the soil in manure. Goats are very selective browsers, and have the ability to select the more nutritious parts of a plant. Therefore, they typically will consume a diet that is of higher quality than the average available forage. This means that goats normally consume forage that is adequate to meet or exceed the protein requirements of the animal. In some cases an energy supplement may be necessary, however. More information on pasturing dairy, cashmere, and mohair goats is provided in ATTRA's *Sustainable Goat Production: Dairy Goats; Sustainable Goat Production: Cashmere*; and *Sustainable Goat Production: Mohair*.

Supplemental Feeding

In addition to pasture or hay, goats may need supplemental grain feeding, especially during the wintertime. Goats need a proper balance of energy in the form of roughage or grain, as well as protein, vitamins, minerals, and clean water. Protein and energy requirements vary depending on type of goat and stage of production.

In general, a rule of thumb for all goats is as follows: browse and pasture in the summer; hay and grain in the winter; trace mineralized salt at all times. (The salt should be fortified with selenium if you live in an area of the country with selenium-poor soil.) When breeding begins in the fall, producer Sue Drummond feeds her angora goats with not only hay, grain, and salt, but also vitamins (A, D, and E) and di-calcium phosphate (2). Kelp, a seaweed high in minerals, is sometimes used as a supplement. Alternative feeds, such as roots and tubers (sugar beets, mangels, sweet potatoes, turnips), may be fed for their energy content or nutritious greens. Various by-products are commonly fed to goats as well.

Grain is the concentrate most often provided to goats. Cereal grains such as oats, corn, barley, and wheat are high in energy (carbohydrate/fat); lesser-known grains such as amaranth and buckwheat are also sometimes used. Soybean meal and cottonseed meal are high-protein supplements. The choice of concentrate is influenced by the composition of forage being fed. High-quality forages usually have adequate or even excess nitrogen; animals eating these will need a higher-energy concentrate to utilize the nitrogen present. Lower-quality pastures or hays will require higher-protein supplements.

Dairy goats need both high-quality forage and supplemental grain in order to reach their full potential, especially during peak lactation or growth. More information on supplemental feeding of dairy goats is provided in ATTRA's Sustainable Goat Production: Dairy Goats. Fiber goats, on the other hand, may not do well with supplemental grain: feeding too much protein can make mohair fiber coarser, and feeding above maintenance requirements does not improve cashmere production. More information on feeding angora and cashmere goats is provided in ATTRA's Sustainable Goat Production: Angora Goats and Sustainable Goat Production:

Cashmere Goats.

Goats can be picky eaters and may not immediately accept new feeds. Feed changes should be made gradually to avoid upsetting the rumen microflora. Also, very high levels of grains can cause upset in the rumen. Like people, some goats will only eat certain feeds, and will continuously pick out the one they don't like. Producers learn what their goats like and adjust the ration accordingly. Consultation with a nutritionist is a good practice for commercial-scale operations.

Health Concerns

Few diseases afflict goats, and most producers find that there are even fewer health problems when using management intensive grazing. Producers practicing MIG observe their goats at every paddock move. Observation is the best way to avoid entirely, or at least catch early, any disease or other problems that might occur.

Keeping livestock as stress-free as possible keeps their immune system functioning at a high level. A healthy immune system is the best disease preventive. Intensively managed livestock become calmer and tamer. Handling them calmly makes them easier to work when things such as loading and vaccinating need to be done. Periods of stress, such as weaning, may trigger disease.

Preventive management is fundamental to maintaining health. Proper nutrition, sanitation, and ventilation, and timely treatment or culling of problem animals, will help keep the herd in good health while reducing costs. For example, the teats of milking does are usually dipped in disinfectant after milking while the teat entrance is dilated, since mastitis occurs when bacteria enter the teat. For another example, regular foot-trimming helps to prevent foot rot.

A producer should check with their local veterinarian to get recommendations for a vaccinating and health maintenance schedule for the goat herd. In many areas, veterinarians recommend vaccinations for tetanus and enterotoxemia. Certain selenium-poor regions also require the use of a selenium and vitamin injection several times yearly. In other areas, additional vaccines or injections for other diseases or deficiencies may be necessary.

Before anyone (new or established goat producer) buys a goat, the buyer should check out the herd. The buyer must ask questions of the seller and learn as much as possible about goats and goat diseases. The buyer has to decide what diseases or problems they can or cannot live with, or are willing to treat or vaccinate for. The buyer has to know what can or cannot be treated and the consequences of getting the disease in their herd.

Caprine arthritis-encephalitis

Caprine arthritis-encephalitis (CAE) is the most serious disease facing the goat industry. It is an incurable viral infection that causes arthritis, a hardened udder which produces no milk, and a general wasting away. There is currently no vaccine for the disease, and the only way to avoid its devastating effects is to prevent animals from

becoming infected.

The most common route of transmission is through the milk, although saliva and possibly semen are two other routes. Heat-treatment of colostrum and pasteurization of milk will kill the virus, and are the only known ways of preventing the infection from passing to uninfected kids. Anyone purchasing a goat should ask about the method of kid-raising and whether CAE blood tests have been run. Because some goats do not seroconvert to CAE-positive for two years, a single negative blood test is not necessarily reliable. When kids are bottle raised on non-pasteurized milk, the milk is usually pooled for all kids, so that one positive doe can have a disastrous effect on a goat herd's CAE status. Goat producers who are really conscientious about ridding a herd of CAE will not allow infected goats to have any contact with non-infected goats.

Some CAE-positive goats never show any symptoms of CAE; a good kid producer or a heavy-milking doe that is CAE-positive may still have a place within the herd. The producer should consider their goals and priorities for the enterprise when determining whether a goat should be culled on the basis of its CAE status.

At one time, it was thought that only dairy breeds of goats had a high incidence of CAE. However, with so many kids of other breeds being fed infected milk, the situation has now changed. Anyone buying any type of goat must be just as concerned about the CAE status of the animals as someone purchasing a dairy goat. If the doe is CAE-negative, it is best to raise the kids on the doe. Some imprinting of the kid to the producer should take place for taming purposes.

Caseous Lymphadenitis

Caseous Lymphadenitis (CL) infects animals by entering through breaks in the skin, such as cuts or scrapes from shearing, barbed wire, thorny brush, etc., and becomes localized in a regional lymph node. The resulting abscess can be either external or internal. Draining or open external abscesses cause reinfection and transmit CL by direct contact. CL can be picked up in bedding or in another area that has been contaminated by goats having abscesses. Internal abscesses occur when the thoracic lymph duct is affected.

Many excellent books on goat health and diseases are available from various sources. See the end of this publication for information on several of these books.

Parasites

Parasites, especially internal ones, are another important medical concern. Because of goats' browsing preferences, a herd may have little difficulty with internal parasites. An understanding of how infestation happens will help to avoid major problems. All infestations occur when the animal ingests the infective larval stage from contaminated pasture, hay, or living quarters. The larvae develop from eggs that were passed from an animal through its feces. If there are no adult worms within any of the goats, this infestation cannot occur. Even if larvae are present in the pasture, since goats prefer eating at eye level they are less likely than other ruminants to consume them, because the larvae do not climb up grass blades to eye level. This is one of several good

reasons for managing pastures so that they are not grazed too short. A suggestion would be to maintain forage above 4 inches at a minimum.

Have a veterinarian check fecal samples for parasite eggs, and recommend an appropriate dewormer if necessary. For milk-producing goats, it is necessary to consider the withdrawal period that a chemical dewormer may require before the milk can be sold for consumption (in order to be free of residues). Be sure to reworm in three weeks to kill any adults that were ingested the day of the first worming. (It takes three weeks for larvae to mature to adult worms.) Worming and then moving goats 24 hours later will also leave behind the vast majority of contaminated feces. Pastures are considered clean if goats have not been grazed on them for 12 months, or if they have been hayed or rotated with row crops. In the meantime, cattle or horses may be grazed in the infested area, as they do not carry the same species of worms. Goats and sheep do share the same parasites.

The complete eradication of livestock pests is not feasible nor is it economically necessary-a certain level may be tolerable. Goats, just like other species of livestock, may develop some immunity to worms. A low-level infestation is therefore sometimes more advantageous than no parasites at all. Lack of immunity is very damaging to Angoras, for example. When they are moved from arid range conditions, where there are few internal parasites, to more humid conditions where parasite populations may be higher, serious problems often develop. Some individual goats have a higher natural immunity than others.

Coccidiosis, a disease resulting from infection of the intestinal tract by parasitic protozoa called coccidia, causes scours in goats, particularly in kids. There are several coccidiostats (anti-coccidia medications) on the market, but again, management is key for control. Coccidiosis occurs in damp, crowded areas. Keeping kids away from those areas prevents serious problems. Animals gain immunity to this organism by nine months of age, and clinical disease rarely occurs in adult animals.

Refer to ATTRA's *Integrated Parasite Management for Livestock* for more information on managing parasites.

Flies

In confinement situations, fly control programs should be implemented early in the season before the fly population gets out of control. Integrated pest management (IPM) can be used. Parasitic wasps are a biological method used to control barn flies. These wasps lay their eggs in fly pupal cases; wasp larvae kill the developing flies by feeding on them. Light traps, baited traps, and sticky tapes are physical ways to control flies in barns. Cultural practices are important in an integrated system of controlling flies-since moist manure, spilled feed, and damp bedding encourage insect growth, sanitation on a regular schedule is important in confinement areas. Drainage problems that allow water to accumulate should be eliminated. ATTRA has more information on alternative fly control available upon request.

Reproduction

Most goats are seasonal breeders, reacting to shorter day lengths as a cue for breeding. Does usually need to be stimulated by the presence of males to begin cycling. Breeding usually occurs in the fall, and kidding follows 150 days later, in the spring. Matching kidding to high forage production in the spring makes efficient use of pasture.

Proper nutrition of the doe is essential for improving reproductive efficiency. Flushing¾feeding a high-energy diet 3 to 4 weeks before breeding - can improve conception rates by increasing the number of eggs produced. Twins are the rule, and many producers routinely achieve over a 200% kidding rate. Reproductive efficiency is also enhanced by pregnancy-checking (ultra-sound) for bred females. Kidding should occur on clean, well-rotated pasture or in an indoor stall with bedding. During cold weather, hypothermia (chilling) needs to be prevented. Here are a few suggestions for successful kidding in cold weather:
· avoid drafts, but maintain ventilation (set up bales around pens)
· dry kids thoroughly with a cloth at birth
· put "body socks" on the kids' midsections to keep them warm¾cut toes off and cut holes for legs in wool socks, or use sweatshirt sleeves
· if a kid is chilled at birth, force-feed colostrum and rewarm the kid under a heat lamp or by another method until the kid's temperature is normal.

Strict culling of does that do not meet the operation's standards will improve the herd. The producer can use natural selection for "easy keepers" or select replacement animals that meet some other goal. Artificial insemination provides access to high-quality bucks. Controlled breeding-using natural or artificial means-will also improve the herd.

Management

Kids that are raised naturally with their mothers usually grow better than those that are bottle-fed. However, for dairy production, it may be more economical to separate the kids from the mothers, provide a milk replacer, and sell the extra goat milk. It is essential, however, that kids receive colostrum the first two days of their lives. Kids are raised for replacement stock, sold for breeding stock, or slaughtered for meat.

Castration of males and disbudding should be done at an early age to reduce stress to the animal. Castration with elastic bands is carried out within a week of birth. Male slaughter goats are often castrated, since the meat may have a strong flavor in intact males after 4 months of age. Some ethnic groups, however, want intact males. Disbudding is often done in goat dairies to prevent problems with horns in the milking parlor. Kids are disbudded between 3 and 4 days after birth.

Some additional management practices for an efficient operation include record-keeping and animal identification by eartags or tattoos. Shelter should be provided to keep the goats dry in cold, wet weather. They can tolerate cold weather, but they get chilled by wet, cold conditions. Buildings may be minimal, but should be well-ventilated and clean.

Marketing

This section should probably be on the first page, because marketing must be seriously researched and planned up-front. Before beginning production, it is essential to know what goat products you are going to sell, and where and how you will market them. Goat meat, which is 50-65% leaner than beef, will be either the primary product or, in the case of dairy or fiber enterprises, an important secondary one. Called "cabrito" or "chevon," goat meat is considered a gourmet or health food by some, is popular in areas with certain ethnic populations, and is often processed into products such as sausage or jerky. Please refer to ATTRA's *Sustainable Goat Production: Meat Goats; Sustainable Goat Production: Dairy Goats; Sustainable Goat Production: Cashmere;* and *Sustainable Goat Production: Mohair* for more information about goat products and their markets.

It may be possible to establish a niche market through direct marketing. Many consumers would like to buy products that have been raised with a minimum of synthetic chemicals and pesticides. With any agricultural enterprise, it is important to determine market potential before making an investment in production. Refer to ATTRA's *Resources for Organic Marketing*, *Direct Marketing*, and *Alternative Meat Marketing* for additional information.

Certified Organic Production

Certified organic is a niche market with growing potential. The U.S. Department of Agriculture has released the National Organic Program final rule, which was effective as of April 2001. The rule will supersede any private certifying organization's requirements, but producers will still be certified by these organizations. ATTRA has information about the rule and the certification process available on request.

For an organic goat feeding program, a combination of organic pasture and purchased organic feed grains may be considered. Pasture must be free of synthetic pesticides or other prohibited substances for 3 years to be certified organic. Producers may want to request ATTRA's *Organic Livestock Feed Suppliers Resource List*.

Profitability

Unless goat production is a hobby, it is important to do feasibility and business planning. A feasibility study identifies "make or break" issues that would prevent your business from being successful, and answers whether the business idea makes sense. A feasibility study also provides useful information for the business plan, especially the marketing section (3). If the feasibility study indicates that your business idea is sound, the next step is a business plan. A business plan is an analysis of how well the business will work-your competition, the market, your capital and operating expenses, management and staffing needs, manufacturing process, etc. It is also a written document necessary for obtaining a loan (3).

Producers may work cooperatively to more effectively use labor and other resources by processing together, marketing together, buying bulk, etc., and to gain better access to funding and technical assistance. The USDA/Rural Business and Cooperative Development Service (4) provides technical support for cooperative development.

Contact them for a catalog of publications and services.

Sources of Further Information and Supplies

Goat experts at Langston University's Institute for Goat Research (5) are valuable sources of information. This is a goat research program with specialists who are willing to answer questions about all types of goats-dairy, meat, mohair, and cashmere. A list of their goat publications is attached.

Caprine Supply (6) and Hoegger Supply Company (7) both sell goat equipment, including veterinary, feed, tattooing, disbudding, show, barn, insemination, and fencing, along with milking and dairy equipment. In addition, they sell many of the books available on general goat production and specialty books on dairy goats, cashmere, and mohair. A list of books is also provided at the end of this publication.

A good way to learn is from other producers, either formally or informally. Some farms provide internship opportunities. See ATTRA's *Internships and Apprenticeships Resource List*. There may be an association of goat producers in your area. Associations may be focused on a locality, a type of goat, or a particular breed. One way to locate an association is to contact your local Extension office. There are goat listservers on the Internet with active producer participation, as well as numerous sites offering goat information, such as <http://www.cybergoat.com>, <http://lenoir.ces.state.nc.us/staff/jnix/Ag/Goat/>, and <http://www.ansi.okstate.edu/LIBRARY/Goats.html>.
The University of Maryland's National Goat Handbook may be found at <http://www.inform.umd.edu/EdRes/Topic/AgrEnv/ndd/goat>.

The *Stockman Grass Farmer* (8), published monthly, has many informative articles about making pastures profitable by grazing livestock, and includes articles describing rotational grazing and innovative forage production. *Countryside & Small Stock Journal* (9) is a monthly magazine geared for homesteaders and contains useful articles on goat production. *The Goat Magazine* (10) covers all breeds of goats.

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3) University of Wisconsin Center for Cooperatives. 1998. Cooperatives: A Tool for Community Economic Development. University of Wisconsin, Madison, WI.

4) USDA Rural Business and Cooperative Development Service
Stop 3250
Washington, D.C. 20250-3250
202-720-7558
202-720-4641 Fax

http://www.rurdev.usda.gov/rbs/coops/cswhat.htm
e-mail: coopinfo@rurdev.usda.gov

5) Langston University
Agricultural Research & Extension
P.O. Box 730
Langston, Oklahoma 73050
405-466-3836
405-466-3138 fax
http://19.135.141.50/research/web.htm

6) Caprine Supply
P.O. Box Y
3301 W. 83rd Street
DeSoto, Kansas 66018
913-585-1191
800-646-7736
http://www.caprinesupply.com

Offers Extension Goat Handbook for $24.00 plus $5.75 postage.

7) Hoegger Supply Company
160 Providence Road
Fayetteville, GA 30215
800-221-4628

8) The Stockman Grass Farmer
P.O. Box 2300
Ridgeland, MS 39158
800-748-9808

9) Countryside & Small Stock Journal
W11564 Hwy 64
Withee, WI 54489
800-551-5691
http://www.countrysidemag.com

$18 per year.

10) The Goat Magazine
2268 CR 285
Gillett, TX 78116
830-789-4268
830-789-0006 fax
http://www.goatmagazine.com
e-mail: editor@goatmagazine.com

Six issues per year for $24.00. $5.00 for a sample issue.

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International Winrock Publication Sales, P.O. Box 9363, Arlington, VA 22209-0363

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ATTRA Program and Technical Specialists

May 2001

The ATTRA Project is operated by the National Center for Appropriate Technology under a grant from the Rural Business - Cooperative Service, U.S. Department of Agriculture. These organizations do not recommend or endorse products, companies, or individuals. ATTRA is located in the Ozark Mountains on the University of Arkansas campus in Fayetteville, at PO Box 3657, Fayetteville, Arkansas, 72702. ATTRA staff prefer to receive requests for information about sustainable agriculture via the toll-free number 800-346-9140.

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APPPA Grit!

American Pastured Poultry Producers Association

Issue 5 Summer, 1998

Beneficial Acid is a casualty of animal diets and the war on fat

excerpts from HOARD's DAIRYMAN, June 1998

Inside this issue:

Conjugated linoleic acid (CLA) is a mouthful of a name for a compound that used to be easy to swallow. That was before the advent of the modern low-fat diet and before we moved dairy cows (*and chickens!*) off the pasture and into the barn.

Now science indicates that one side effect of people cutting out fat is cutting out CLA, a component of fat that has been shown to slow the progress of some types of cancer and heart disease, and appears to actually help reduce body fat and increase lean muscle mass.

"We have a tendency to get a little information and think that all fat is bad," says Tilak R. Dhiman, a Utah State University animal scientist who is examining ways to increase the CLA content of milk, cheese, and meat.

"We must distinguish between types of fats. We tend to think all fat is bad for us, but nutrition is complex and we don't know everything about it."

Occurs naturally . . .

CLA is a fatty acid that occurs naturally in many foods and is especially high in milk and meat from ruminant animals such as cows, sheep, and goats. The acid is produced by bacteria in the rumen, according to a recent article in "Utah Science" a publication of the Utah Agricultural Experiment Station.

While the relationship between diet and cancer is extremely complex, CLA has been found to inhibit the growth of chemically induced skin and stomach cancers in mice, as well as cancer in the mammary glands of rats. Cancer research using other animals has produced similar results.

Affects Consumption . . .

In following the food chain down to the molecular level, Dhiman has found the amount of CLA in milk and meat has everything to do with what the ruminants consume. Dhiman and others have found that the CLA content of milk is as much as five times higher when cows graze green, predominantly ryegrass or natural pastures than when they eat diets consisting of 50 percent stored forage, such as alfalfa silage or corn silage and 50 percent grain.

CLA content of various foods (milligrams per gram of fat)

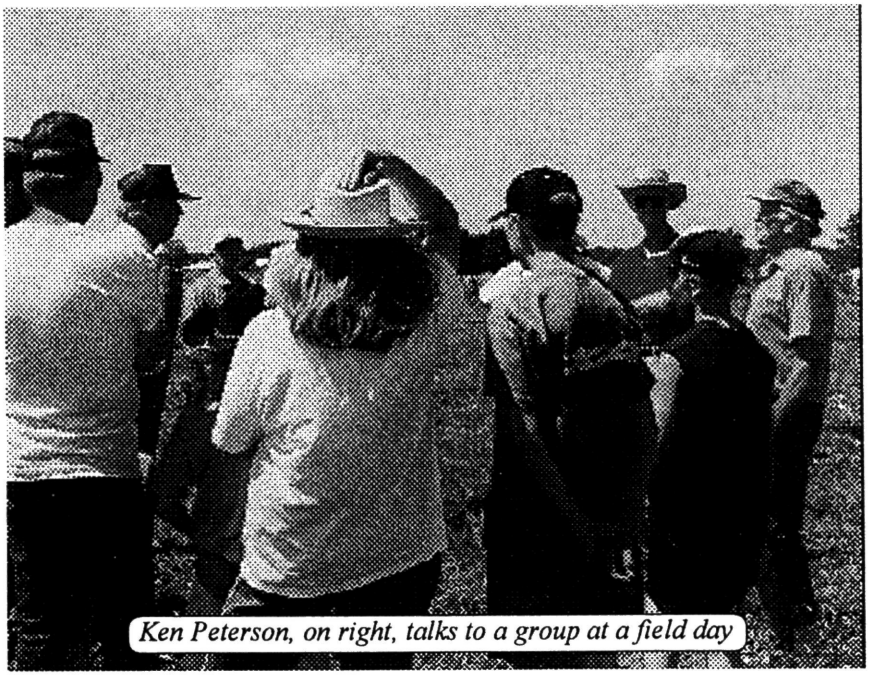
Lamb	5.5 mg
Milk	4.5 mg
Beef	4.0 mg
Turkey	2.5 mg
Chicken	0.9 mg
Pork	0.6 mg
Fish	0.3 mg

Dhiman says it is possible that something in green grass enhances the growth of the particular bacteria in the rumen that is responsible for producing CLA.

Similar studies in other laboratories have found rats, mice, and chickens fed a CLA-rich diet reduced body fat and increased lean body mass. Studies in other areas are tracking long-term changes in human subjects, he says.

Until the results are in, dietary moderation is still the best advice for humans, Dhiman says, cautioning that people might want to think about the milligrams of CLA they are passing up in their efforts to cut all the dairy and meat fats from their menus.

Grass-and Forage-based Finishing of Beef, with Consumer Testing



Ken Peterson, on right, talks to a group at a field day

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Project Duration
1997 to 1999

Demonstration Farmers
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Ray Johnson, dairy, Kettle River

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Keywords
naturally produced meats, grass based beef, winter feeding, frost seeding, consumer taste testing

Project Summary

This project documented the early stages of product development, education, and consumer testing of meat products for the members of the Lake Superior Meats Cooperative (LSMC). The initial goal of the project when it began in 1997 was to correlate current pasture-based finishing practices with consumer acceptance of beef. This was intended to help LSMC develop production guidelines for "naturally" raised livestock for its producer members.

The project gauged consumer response to LSMC meat through controlled taste test panels and through on-farm education activities. These activities were great opportunities for farmers to show consumers what they do and why. The project also provided educational activities to LSMC members on pasture and livestock management for grass-based livestock production.

Project Description

The shortage of USDA-inspected processing facilities close to Carlton County makes direct marketing of custom processed meats all the more important for the viability of local livestock production. The LSMC was developed to facilitate the processing and marketing of meats produced naturally in northeastern Minnesota. The co-op is made up of about 100 producer members. Throughout most of the project period, LSMC processed members' meat in Hinckley and marketed products in Duluth.

This project had three components: 1) pasture analysis; 2) field days and consumer education; and, 3) consumer taste test panels.

The goals of the pasture analysis component were to have farmers learn how to analyze the quantity and quality of pastures and to share this information with other farmers in northeast Minnesota. Two farmer cooperators are working with Kelly Smith from the Carlton County Soil and Water Conservation District (SWCD) on pasture analysis.

These farmers were:

1. Tim Malone and family of Sturgeon Lake. Tim raises about 40 head of Hereford crosses and Angus crosses on 200 acres with 50 acres in paddocks.

2. Ray Johnson and family of Kettle River. Ray raises about 100 Holsteins on 520 acres, intensively grazing primarily grass pasture.

Field days were held often throughout the project as a way for LSMC members to show consumers how and why farmers raise their livestock the way they do. Field days are also a great way for farmers to network with each other to discuss grazing management techniques.

The consumer taste panels were a way to gauge consumer response to pasture raised meat. This testing served to educate consumers on the benefits of pasture raised livestock and to provide producers with information about what consumers expect in taste and texture from their meat.

Results and Observations

Pasture Analysis

In 1997, baseline data on pasture quality was collected on the cooperating farmers' (Johnson and Malone farms) pastures to serve as a gauge for the work conducted throughout the project. Overall pasture conditions were mostly "good" (21 to 30 points out of 40) to "very good" (31 to 40), with a range of 17 to 33.5.

Kelly Smith reported that one result of this work was that he learned much more about livestock farming and about what is and is not practical for producers in improving pastures. Recommendations for pasture improvements that call for an extra, time-consuming trip to a pasture, for example, probably will not be adopted. In addition, northeastern Minnesota pastures tend to be acidic and, while liming sources are available inexpensively as by-products, lime can't be incorporated into a rocky pasture and instead must be top-dressed.

In 1998, Denny Tressel, from NRCS, and Kelly Smith made six visits to the Malone farm between May 27 and November 6 and made five visits to the Johnson farm between June 30 and November 6. Field evaluations were completed at the end of the year for each of the 11 pasture fields walked at each farm. These evaluations include assessments of grassland condition and trends, soil tests, soil survey maps, estimates of forage available on September 28, 1998, and recommendations.

In 1999, Tim Malone established two experiments on his farm. The first was to feed hay in the pastures throughout the winter of 1998-99. The second experiment was to enhance pasture diversification with frost seeding.

Tim wanted to see if the arrangement of the hay in the pastures achieved an even manure distribution and helped to reseed the pastures. Some of the pastures were not doing as well as Tim desired, so he placed bales of single-cropped hay, that was cut late and had seeds in it, throughout the field. He sectioned off these fields in strips with electric fence and used cross-fences to provide a new piece of the strip every couple of days. The feeders were moved back with the cows so that they would eat the hay and deposit manure with the seeds in it.

Tim observed that the pastures received aggressive hoof action over the winter. The results were an increase in stand establishment in the areas where animals were fed hay in the pasture compared to the areas the cattle were fenced out. A possible reason for this increase was that there was more soil to seed contact as a result of the hoof action roughing up the pastures. Another reason for improved stand could be that nutrients were being supplied to the area with the manure distribution.

On March 19, 1999, Tim frost seeded three separate pasture species with a hand broadcast seeder. The species were 5 lb/A of Arlington red clover, 8 lb/A bison grass which is a type of perennial ryegrass, and 8 lb/A Norcen birdsfoot trefoil. Tim applied calcimetic lime with a three-point hitch, broadcast whirlybird spreader across each of these species in two treatments. The treatments of lime were 50 lb/A and 100 lb/A.

Red clover had the best establishment and increased yield of the three species. This could be due to better seedling vigor and fairly low soil pH of 5.4. The birdsfoot trefoil and perennial ryegrass took off only in open areas. This could be contributed to the open areas providing better soil to seed contact, whereas the other areas were worn out pasture with a lot of debris inhibiting soil contact. There also was a lot of moss on the soil surface because of the unusually warm winter.

The producers feel that the education they received from the pasture establishment studies provided them with a lot of experience in finishing animals on grass. They gained more insights into which plants do better in specific parts of the pastures and learned how to manage the spots that tend to be drier or wetter depending on the weather. This information will help the LSMC establish production guidelines for its producer members.

Field Days and Consumer Outreach

Three field days were held in 1997. One was designed to share information about grazing and marketing with other farmers. It was held at the Johnson and Malone farms. The other two field days were aimed at broadening the consumer outreach component of the project.

The two consumer tours were in August and September. Some of the visitors came from as far away as 60 miles. Discussion included the importance of livestock in sustainable agriculture and of bridging the gap between animal and crop production. Response to these consumer field days was enthusiastic. Many visitors phoned ahead to confirm details and were glad to have a chance to visit a farm. These visitors are looking forward to future tours.

On July 19, 1998, in nice, cooperative weather, about 60 people attended a tour at Ken Peterson's beef farm and Keith Payton's bison ranch, both near Carlton. After a lunch of the operations' meats, Ken spoke on the ethics of livestock production, his direct marketing efforts and whole farm planning, and led visitors out to the pasture to discuss rotational grazing. Chris von Rabenau, assistant manager of the Whole Foods Co-op in Duluth, spoke on the increasing interest in "natural" meat, and Dennis Sjodin of the Minnesota Farmers Union spoke about the importance of supporting small local farmers. Visitors at the Payton ranch witnessed the animals running through a squeeze chute for a worming treatment.

The overall response to the tour was positive: one person commented that they hadn't known that good beef could be bought locally or that "chemical-free" beef existed. Visitors had more questions for Ken about cattle and cattle production than had been anticipated.

There were two events for producer education and consumer outreach in 1999. On July 17, Tim Malone held a producer tour of his experimental plots of winter-feeding and frost seeding. On August 14, Ken Peterson and Keith Payton held a consumer outreach tour to

show their beef and bison farms. Mark Schultz of the Land Stewardship Project spoke about the politics of our food system. August is a good time of the year to show consumers pasture-based operations.

Consumer Taste Test

In early December 1997, LSMC gathered nine people interested in local meats to conduct a blind comparison test of conventional meat market product with forage-finished meat. The participants compared rib eye steaks from the store with rib eye produced by project demonstrator, Tim Malone. Participants were given one pound of LSMC ground beef as a thank you.

Two steaks from each treatment were broiled on an open broiler and cooked to an estimated medium degree of doneness. Participants were presented with three ½" x ½" cubes from each treatment. Participants were asked to circle the verbal description that characterized their eating pleasure for each treatment. Forage finished steaks averaged 5.6 out of a total of 9 points; meat market steaks averaged 7.2.

In 1998, the component of education was added into the study to help determine whether consumer acceptance of LSMC meat was greater among participants who had been educated about the way LSMC livestock are produced and about the benefits of "natural" meat, than participants who had not been. It was a test of the information used in LSMC marketing although it also provided some information on consumer acceptance of the meat itself.

On November 30, 1998, 30 people participated in the taste test. The goal, which was withheld from participants, was to test the effectiveness of LSMC marketing information. Comparing samples of conventional store-bought meat with LSMC meat did not really tell LSMC members what they wanted to know. They wanted to know whether they were giving people effective information about the difference between conventionally produced meat and LSMC meat.

Participants were divided into two groups in two rooms. The 17 people assigned to "Group Non" were presented with two saucers with three samples in each saucer and instructed to sample them and complete the ratings form. The 13 participants in "Group Ed" were given one saucer of meat, the LSMC brochure, a Sustainable Farming Association newsletter and a 15-minute presentation on LSMC. They were told that they were testing three samples of LSMC meat.

Eight one-inch thick steaks from a forage-finished steer were broiled on an open broiler to an estimated medium rare degree of doneness. The steak came from a Hereford cross steer, about half British breeding with some Limousine. It was born in March 1997, weaned in November 1997 and fed on hay with a 1.5 to 2 lb corn/oat mix with trace minerals and vitamin supplement over the first winter (about 200 days). The steer was on green pasture all summer and finished, starting 60 days before slaughter, on free choice hay with five pounds of corn per day while on green pasture. The steak was aged 20 days in the meat processor's cooler at 36 to 38°F. The steaks were markedly better in grade with more marbling than the ones used in last year's taste test, which had been finished on grass with two pounds of corn per day over 45 days.

The steaks were cooked to an estimated medium rare degree of doneness because there wasn't enough time to cook them longer. As many people are concerned with the safety of undercooked meat, the steaks should have been cooked to a medium degree of doneness. Two participants thought that the samples were too rare.

The steaks were cut into cubes measuring between 0.5" x 0.5" x 1" and 0.75" x 0.75" x 1". The cubes were placed on strips of aluminum foil that had been pressed into the bottom of a glass saucer, and the aluminum foil was folded over the cubes to keep them warm. Three cubes were placed in each saucer. Each saucer was given a number and saucers were numbered consecutively.

Results of the taste test in 1998 indicated a higher level of acceptance of LSMC meat in the "educated" group than in the non-educated group. Group Ed's ratings averaged 8.4 on a scale of 1 (low) to 9 (high), and Group Non's ratings averaged 6.9. Group Non participants were given two identical sets of samples as a bluff and the ratings for these two saucers were very close. In 78% of the ratings, the scores were equal to or less than one score apart.

Discussion and Suggestions for Conducting a Taste Test

Suggestions on Logistics

1. Have all aluminum foil cut and labeled beforehand.

2. Start steaks 30 to 45 minutes before test start, cut and wrap in foil, and keep in barely warm oven.

3. Have sign-in sheets for participant names and addresses in both rooms.

4. Make pencils available on all tables.

5. Have juice, glasses and crackers in room beforehand, and let people know whether they may go ahead and eat them.

6. Have brochures and other information in a stack ready for people when they leave, if they haven't already received them.

7. Don't let completed evaluation forms sit unattended. An advertising representative from a TV station was hanging around and looked through them.

8. Three people to prepare and run the test are not enough. We needed:

- one person to cook and cut steaks
- one person to prepare, load and deliver saucers
- one person to direct participants on arrival
- one person for each group to keep them company while they wait for the test to start, give instructions and answer questions, collect forms (keeping them together, marking them as necessary)

- one person to be the contact for the co-op, to answer questions that group "Non" has as they depart

Management Tips

1. Serve locally produced food as part of a lunch or treats during a field day and advertise them that way.

2. Provide transportation, such as hire a church bus or some other means of helping consumers get out to the tour.

3. Arrange a panel of speakers to formally or informally address issues of food safety, nutrition, animal welfare, and others of concern to consumers.

4. Plan for different non-farmer audiences: are you addressing agency people, consumers, environmentalists, etc.?

5. Publicize. Bring the media out, especially newspaper and TV, and especially if you can tie the tour to something currently in the news.

6. Design the field day with the real, immediate needs of your local producers in mind.

7. Prepare the promotional material enough in advance so it appears in extension newsletters and other producer-specific media.

8. Organization is extremely important. Although an interagency approach is very beneficial in the long run, it does take more advance planning than we had been prepared for, and the pasture analysis component of the project started much later than we had planned.

9. Keep the taste test simple.

10. Plan experiments modestly, and start out small, not overestimating the time that producers will be able to spend on special project work. For the long-term goals of this project, learning pasture assessment is a sound first step in improving the quality of direct-marketed meat.

11. To improve species establishment, a light cultivation or disking helps break up the thatch and gives better seed to soil contact.

Measuring pasture growth with a pasture stick at the Malone field day

12. Keeping animals off the pasture for three weeks after germination helps plant establishment.

13. Birdsfoot trefoil has poor seedling vigor. Keep competition low to help it establish.

Cooperators

Kelly Smith, Carlton County Soil and Water Conservation District
Jeff Stewart, Natural Resources Conservation Service
Troy Salzer, Carlton County Extension Service
Ken Peterson, NE Minnesota Sustainable Farming Association

Project Location

Various locations within Carlton County. Contact Jenifer Buckley at the Lake Superior Meats Cooperative for information.

Other Resources

Can Grass Fed Beef Compete? (March 1998). Beef Today. From Website: http://www.farmjournal.com.

National Livestock and Meat Board. (1995). Beef Customer Satisfaction. Distributed by National Cattlemen's Beef Assoc., Addison, IL, 800-368-3138. Pasture finished beef a hit. (Sept. 1998).

Pasture Talk, Middleton, WI, 800-831-3782. On SARE-funded meat taste panels by Cattleleana Ranch, Omro, WI.

The Stockman Grass Farmer, P. O. Box 2300, Ridgeland, MS 39158-2300, 800-748-9808. Monthly publication devoted to grazing.

Talking to consumers about sustainable products. (Sept. 1988). Food Choices, Food Choices, 30 W. Mifflin, Suite 401, Madison, WI, 608-258-4396. A project of the Organic Alliance Cooperative Development Service and the Land Stewardship Project.

TasteTest, Toronto, Ontario. http://www.tastetester.com/survsamp.html An internet site showing a helpful survey sample of a Canadian taste test.

To market, to market ... 'Healthy Meats' hires director. (Sept. 1998), p 2. Newsletter of the Michael Field Agricultural Institute, East Troy, WI, 608-242-9202. Mentions meat tastings in Madison, WI.

800-346-9140

ATTRA
Appropriate Technology Transfer for Rural Areas

ALTERNATIVE BEEF MARKETING

LIVESTOCK TECHNICAL NOTE

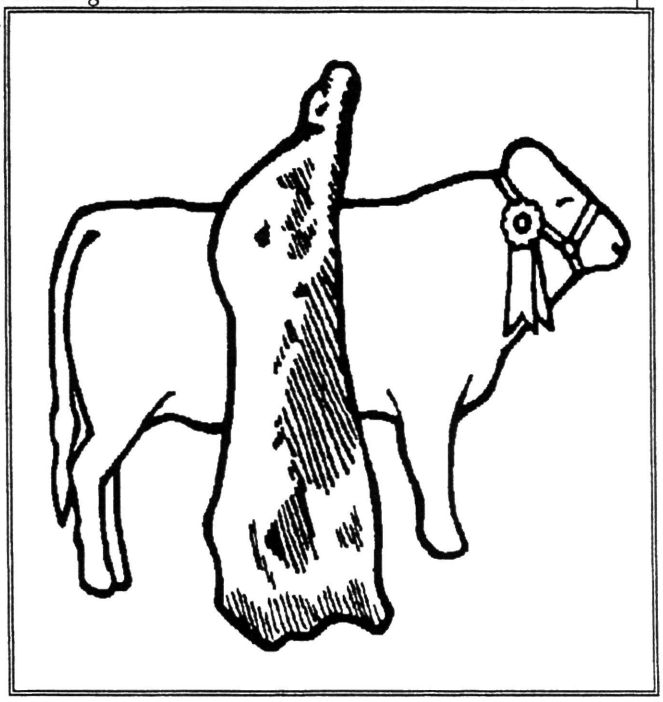
ATTRA is the national sustainable agriculture information center funded by the USDA's Rural Business -- Cooperative Service.

Abstract: *This publication explores marketing alternatives for small-scale cattle ranchers who would like to add value to the beef they produce. Part One discusses methods for adding value within the conventional marketing system, including retained ownership and cooperative marketing. Part Two introduces alternative marketing strategies, including niche markets for "natural," lean, and organic beef. Production considerations for pasture-finished beef are given special attention. A section on direct marketing focuses on connecting with consumers and developing a product. Processing and legal issues are also covered. Two case studies from a UC-Davis report – including an economic analysis – are provided as an enclosure. A list of resources at the end of the document provides suggestions for further reading, contact information for several producers and marketers of "alternative" beef, and Web pages of interest. This document is intended as a beef-focused supplement to ATTRA's Alternative Meat Marketing, which presents in greater depth the many issues and challenges associated with small-scale meat sales.*

Prepared by Richard Earles and Anne Fanatico
ATTRA Program Specialists
Consultants: Lance Gegner and Ron Morrow
May 2000

Introduction

In the present production and marketing structure, about half the value of beef is added after cattle leave the farm, and net returns to the cow-calf producer tend to be low. At the sale barn, the rancher's profit is trimmed by wholesale price fluctuations, "middle-man" fees, and the grading process. Producers who sell in this highly competitive market can be described as "price-takers," competing with many other producers of relatively homogeneous commodity products (1).



CONTENTS

Working within the conventional market, the rancher can significantly increase profit per head of cattle—by retaining ownership past the weaning stage, by producing higher-grade and heavier animals, by carefully managing the culling process, and by minimizing the costs of production. Small producers can further empower themselves by forming marketing cooperatives or other types of alliances.

Some ranchers, however, judging the conventional market as unresponsive both to their needs and to the changing desires of consumers, choose to develop markets outside

the conventional system. They add value to their beef by *differentiating* it from the supermarket fare that is the end product of the commodity market. Alternative marketing of beef primarily means *niche marketing* and *direct marketing*. The "niche" is simply a segment of the buying public unsatisfied with conventional beef, and willing to pay a premium for a leaner, tastier, or more "natural" product. The most likely way for the producer to connect with these consumers is by marketing *directly* to them. In the words of researchers at the University of Wyoming:

> This approach can add value to cattle...[by allowing] producers to capture much of the margin otherwise going to middlemen in the marketing chain. Of course, the producer also 'captures' much of the work and associated costs, as the producer must identify and attract customers, perhaps provide added feed, arrange for slaughter, distribute the product to customers, and secure payment (1).

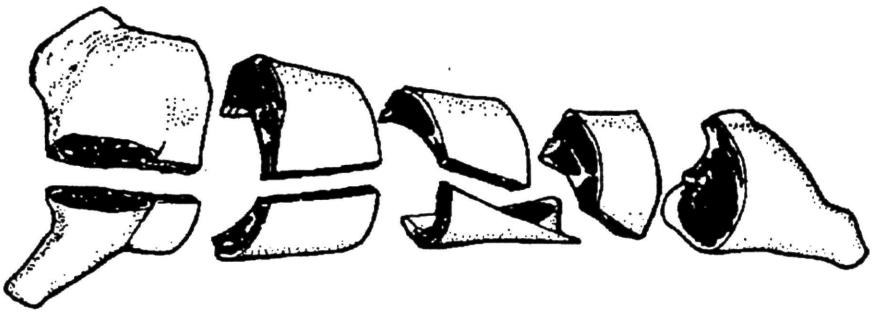
Differentiating your beef from the conventional product entails changes in production as well as marketing. If your customer is a meat packer, your production will have to conform to industry standards for everything from breed selection to use of antibiotics to yield and quality grades. But if your customer is an individual looking for lean beef raised and finished on a local family farm, or raised organically, you will be working with a very different production model. Integrating meat production and marketing may radically alter the whole enterprise. For instance, to improve efficiency within the conventional live-sale market, many ranchers have consolidated their calving schedules. Some alternative marketing strategies, however, may require year-round production to meet year-round demand (2).

Beef that is slaughtered off pasture and sold locally is generally considered more *sustainable* than feedlot-finished, mass-marketed meat. Sustainability means that the best interests of the farm family, the community, and the environment are being taken care of. For some consumers, sustainability is already a strong selling point. Many others can be educated about the values they are fostering when they choose an alternative beef product over the supermarket cut. Pasture finishing combined with direct marketing can substantially benefit the farm family, the rural community, and the environment by:

- keeping ranch families on the land and independent,
- protecting land from development,
- reducing pollution of surface and ground waters,
- building soil and plant diversity,
- rebuilding local rural economies,
- passing down traditional farming and animal husbandry skills.

Alternative marketing strategies can turn price-takers into price-makers, but "the added time, labor and resources needed to perform these added functions beyond producing a calf or yearling" should not be underestimated. "Marketing management expertise also is required, along with the traditional knowledge of the production side of the business" (1). The more you learn and prepare before entering a new market, the less surprising, expensive, and frustrating your "learning curve" will be.

The "Beef Marketing Flowchart" on page five of the enclosed University of California report will help you to visualize the issues involved in pursuing different marketing strategies.



PART ONE: ADDING VALUE TO BEEF IN THE CONVENTIONAL MARKET

> One of the first things you hear when you get into the subject of marketing with a commercial cattle producer, and even with people who run some pretty good size yearling operations, is that cattle are only worth so many dollars a hundred on the market, and it doesn't matter what you do, you aren't going to get more than that. *This just isn't true.* In fact, you can have a great deal of control over the prices you receive for the cattle you sell (3).

The passage above appears in *Cowboy Marketing* by the late Jay Nixon. According to Nixon, "most commercial calf producers in this country are losing from $50 to $100 per cow." They incur this loss by not being active enough in their marketing effort, and not focusing their production on the quality preferences of the market. *Cowboy Marketing* is a primer for producers who have not considered themselves as marketers, and perhaps have a prejudice against marketing.

Nixon advocates raising a marketable product by producing what the packers want, and encourages producers to carefully choose a sale barn, get to know buyers, and prepare a list of the animals they are bringing to market. He also maintains that "culling—what you cull, how you select it, and finally how you market it—is an income decision of major proportion." The book includes chapters on selling cattle in the country by private treaty and co-op marketing, and development of a marketing plan. For information on obtaining a copy of *Cowboy Marketing*, see the **Resources** section at the end of this publication.

Another guide to increasing profits within conventional marketing channels—*Value-Added Cattle: Guidelines for Cow-Calf, Stocker, Feeder*—emphasizes retained ownership options. By retaining ownership through some of the post-weaning production stages (preconditioning, winter pasture, summer grass, and the feedlot), producers can decrease losses from shrinkage and sickness, eliminate middleman fees, and improve the return rate relative to production costs (the pre-weaning stage is the most expensive stage of production). Retained ownership can provide buffering from seasonally low prices, giving some measure of price protection not available to those "selling a bawling calf straight off the cow" (4).

Value can be added to beef through improvement of carcass value. This means turning out carcasses:

- with good yield and quality grades,
- weighing no less than 550 pounds and no more than 900 pounds,
- with sufficient muscling, fewer bruises, and no "dark cutters" (a dark appearance in meat from animals that were stressed prior to slaughter) (4).

The authors of *Value Added Cattle* recommend the Texas A&M Ranch to Rail program, which provides feedback to producers about the performance of their calves after weaning.

> Producers complain that they get average prices in the market place for superior genetics and that they don't receive a premium for delivering a product to the market that has been managed to perform above the average of the industry...The cattle industry is a segmented business in which most calves lose their identity in the market channels. There is little feedback of information to cow-calf producers on how their calves fit the needs of the beef industry...[The] Ranch to Rail program is an information feedback system that allows producers to learn more about their calf crop and the factors that determine value beyond the weaned calf phase of beef production. It also helps them to establish the relative value of their calves compared to the industry norm (4).

To learn more about the Ranch to Rail program and retained ownership considerations, and for information on yield and quality grades and breed sire selection, contact a local Extension office.

Alliances

In a marketplace dominated by large buyers, the independent small producer is at a disadvantage. By creating economies of scale and allowing for effective coordination, *alliances* among producers

with similar goals can add value to beef and increase the members' marketing leverage. Alliances can integrate the cattle market both horizontally (among producers) and vertically (among producers, breeders, feedlot operators, packers, etc.).

An alliance is generally developed around some common goals or values, which may include a health and management program, a specific breed, a geographic identity, or an emphasis on leanness. Alliances allow cow-calf producers to share equally in potential profits through retained ownership, and improve beef cattle consistency by grouping together animals of like type, finish and cutability. Alliances do not guarantee profits. Premiums are given only to cattle that meet specifications. Good management is the key. Most alliances provide carcass data feedback to producers (5).

Colorado rancher Dan Kniffen offers the following cautions for those considering whether to join an alliance:

- The best source of information is direct contact with the alliance's program coordinator. Ask as many specific questions as you can think of. Also ask for names and phone numbers of other participants.
- A good contract will protect both parties in the agreement, providing a timetable and specifying the responsibilities and financial liability of everyone involved.
- Some alliances will require you to place a minimum number of cattle in the program to participate. Almost all alliances have specifications on the genetic composition or biological type of the cattle that are accepted. There are also limitations on carcass size and quality.
- The most critical aspect of an alliance for the producer is the pricing formula. You must absolutely do your homework in this area. Once you've determined how the base price is established, you must pay particular attention to the "premium" and "discount" categories. It's quite possible to receive enough discounts on a few non-conforming cattle to offset all the premiums received on a majority of the cattle. Producers who have some estimation of how their cattle will perform in the feedlot as well as on the rail are in the best position for this type of marketing (6).

According to financial consultant Tom Hogan, few cattle producers really have a grasp on their costs of production. Before joining an alliance, Hogan recommends first finding out the carcass quality of your cattle.

> Retain a set of cattle, run them through to the rail and see how they do. Once you've figured out where you are and where you want to be, pencil out what it will cost you to get there...The key is to avoid discounts. If that means a rancher has to participate in an alliance to learn how to do it, then join one. But in chasing a premium, don't lose sight of all the other efficiencies. That premium won't cover what you lose. Whether marketing through an alliance or outside of one, you're still a price taker and the only way you can be profitable is for production costs to be lower than your receipts (7).

Marketing Cooperatives

An increasingly common type of alliance is the marketing cooperative. A cooperative is a producer-owned, democratically operated business structure with written by-laws. Cooperative marketing arrangements among cattle producers often take the form of packaging cattle in pools for sale. Packaging means that cattle are merchandized by putting them into groups with particular characteristics to meet the needs of buyers (8).

While most cattle operations in the U.S. are relatively small, the marketing system is geared toward large, uniform lots of cattle. The number of cattle in a lot influences the price buyers are willing to pay. The optimum lot size for feeder cattle sold through a regular ring auction is 50-55 head; for a video auction the number rises to about 240 head. Uniformity of weight and sex is also important in getting the best price for a lot. A study conducted at Utah State University found that buyers at a video auction paid approximately $1.70/cwt. more for uniform lots of cattle than for lots that were not sorted by sex and weight. This means that a 500-pound calf sold in a uniform lot would bring $8.50 more than a similar animal sold in a non-uniform lot (8).

A Cooperative in Utah operates in basically the following way:

1.) Each member of the co-op indicates the number of steer and heifer calves he or she will provide to the pool the coming year. This becomes a marketing agreement between the co-op and the producer.

2.) The calves are pre-priced through a video auction using videos and descriptions of "representative" calves. The calves normally are sold in six pools – three for steers and three for heifers, based on different weights. For example, the three steer pools may have average weights of 450 lbs., 525 lbs., and 575 lbs. The pools normally range in size from 150 to 250 head. Pre-pricing through a video auction eliminates the need to gather the cattle to obtain bids. Producers know the day delivery will take place and the price they will receive before the cattle come off the range.

3.) On the day of delivery, producers are responsible for bringing their calves to the loading/unloading facilities. After unloading, the calves are brand inspected and sorted for different pools. The sorted groups for each producer are weighed, and then are placed into their respective pools. Records are maintained on the number and weights of cattle for each producer in each pool. After the pool is completed, the cattle are loaded and shipped.

4.) The co-op is paid by the video auction company and the co-op issues a check to each producer based on the total weight they contributed to each calf pool.

Producers in this cooperative believe that pooling has been a very successful method for them to increase the price they receive for their calves. No members of the co-op have more than 200 mother cows, and some of the producers have fewer than 10 calves to contribute to the overall pool (8).

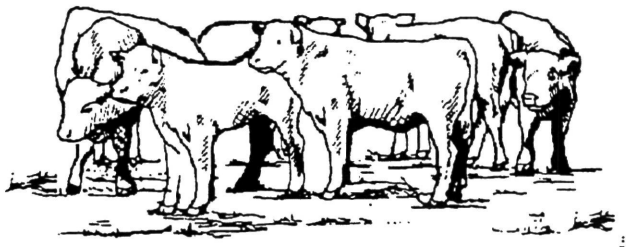
According to the 1997 Census of Agriculture, the majority of farms with cattle have fewer than 50 head of beef cows (9). The average cow-calf operator, after accounting for weaning percentage and held replacement heifers, probably has fewer than 30 calves to sell each year—of both sexes and with a range of weights. Packaging cattle into uniform lots of optimum size is therefore not possible for most cow-calf operators on an individual basis (8).

For the small producer selling in the conventional market, a cooperative calf pool is a great way to get the best possible price. It does require commitment, time, extra work, and, obviously, a willingness to cooperate with other ranchers. For a co-op to work, rules must be firm, fair, and strictly enforced. The rules must set the quality standards of the group; any member whose cattle do not meet the standards is not allowed to sell through the co-op.

The cooperative should be set up as a corporation. As Jay Nixon advises in *Cowboy Marketing*, "Each member should have a real financial stake in the co-op, money he took out of his pocket and invested up front, the amount based on the number of cattle he will deliver for marketing...so that if the co-op makes money, each member is paid according to his interest" (3).

For detailed information and assistance on forming a cooperative, contact the USDA-RBS Cooperative Services Program (see **Resources**). For a "yellow pages" of existing alliances, contact:

BEEF Magazine
7900 International Dr., Suite 300,
Minneapolis, MN 55425



PART TWO: ALTERNATIVE MARKETING OF BEEF

Niche Markets

Corporate consolidation in the beef industry has narrowed the marketing options for small-scale producers. It is increasingly hard for the family ranch at the bottom of the food processing chain to maintain profits at an acceptable level. This environment has pushed many ranchers out of the business, and inspired others to by-pass the industry and market their own products.

At the same time, the industry has faced a continuing decline in beef consumption. By the early 1990s, chicken sales had surpassed beef sales for the first time (2). Factors in this decline in market share include

- lifestyle changes among consumers,
- health risks associated with beef fat and with "red meat" in general,
- concerns about use of hormones, steroids, and antibiotics,
- concerns about bacterial contamination,
- and "the inability of the consumer to purchase a consistent, quality product from the traditional meat case" (2).

It is clear that the industry is failing to meet the demands of a considerable number of consumers. The successful niche marketer will target those poorly served consumers, identify their needs, and produce a consistent, high-quality product that satisfies those needs. Alternative beef marketing operations typically describe their product with some combination of the following terms: **lean, organic, natural, pasture-finished** (or **grass-fed**, or **grass-finished**). Other common selling points for alternative beef include "no antibiotics," "locally raised," "family farm," and "humanely produced."

Before a beef product can be labeled with terms that denote uniqueness or superiority of some kind the producer must file an "Animal Production Claim" with the Labeling Review Branch of the USDA. This involves submitting a label application, a prepared (manufactured) label including the claim in question, and an Operational Protocol (OP). An OP must be in the producer's own words and must state in detail how the animals are raised, including ration formulations, sick animal protocol, herd health management, and other facts relating to the proposed claim (e.g., "no antibiotics," "natural," "organic"). The term "chemical free" is not allowed to be used on a label (2). For details on submitting an "Animal Production Claim", including specific requirements for the OP, contact the Labeling and Additives Policy Division of FSIS (see **Resources**).

Lean beef

While the industry has paid some heed to the growing consumer demand for lean beef, the existing system is still based on USDA standards that give the best grade to carcasses with the most marbling. There is growing agitation within the industry to reform the grading process to better reflect current market trends. Jay Nixon addresses this issue in *Cowboy Marketing:*

> I know that many cattlemen consider the current diet fads of the consumer, ***our ultimate customer***, as a passing thing. And many of them are. But the most rabid prejudice those consumers have is against fat in their diets. This makes the marbling standards of the grading system for beef a negative factor in the marketing of the product...To have a so-called Quality Grade based solely on the single factor that consumers object to most strenuously is just plain stupid. And, I don't believe that this objection is just going to go away (3).

Lean beef appeals to more than a niche market—the mainstream consumer trend is toward low-fat and fat-free foods. Though the industry has been slow to respond to this reality, the grading process will most likely be changed to accommodate production and marketing of lean beef, which is defined as having 25% less fat than the industry average. While "organic" and "pasture-finished" beef clearly represent niche markets, lean beef is suited to the conventional marketing structure. Laura's Lean Beef (see box) is an example of a large-scale alliance that

combines an unconventional product with conventional marketing methods. The small niche marketer probably cannot rely on leanness *alone* as a selling point. To compete with lower-priced conventional lean beef, other qualities lacking in the mainstream product will need to be highlighted, with an emphasis on customer service.

Laura's Lean Beef

Based in Kentucky, Laura's markets lean beef in nine states and is endorsed by the American Heart Association. No preservatives, salts, or fillers are used in packaging. Started in 1985 as a "value adding experiment to a family stocker operation," by 1995 the company was debt-free, worth $20 million, and employing 30 people. Today, Laura's Lean Beef is sold in 2,400 stores in 30 states. Retail sales for 1999 are expected to top $55 million.

The company contracts with family farms to raise genetically lean breeds such as Limousin and Charolais, on natural feeds only, with no routine antibiotics or hormone implants. Grazing, particularly rotational grazing, is an important part of their program, as is low-stress handling of the animals. The cattle are pasture-finished, with a quick grain feed at the end.

As a high-volume commercial business, Laura's Lean Beef is not suited to working with small cow-calf producers on an individual basis. Like the beef inductry in general, the company deals with truckload lots of uniform weights and breeding. Small producers would need to create a cooperative calf pool in order to work with the company, which does offer price protection to ranchers with whom it contracts (10). Producers interested in the details of Laura's cattle program should visit the company's website: www.laurasleanbeef.com/cattleProgram/. See **Resources** for further contact info.

Organic beef

Until recently the USDA did not permit "organic" labels for livestock products, pending federal standards for organic certification. Even farm names with the word "organic" were not permitted on the label. However, in January 1999 the USDA approved the use of a federal label for the interstate sale of "organic meat" (11). As with other labeling claims, the "organic" label must be evaluated and approved by the USDA's Food Safety Inspection Service (FSIS). An application must be submitted, accompanied by the proposed label and the documentation provided by the certifying organization.

In general, organizations certifying organic beef have the following requirements:

- The calf must be born of a certified cow (or in some cases, fed organic feed from 30 days of age).
- 100% of the feed must be certified organic.
- The animal must be treated humanely at all stages.
- Antibiotics, wormers, growth promoters, or insecticides not on the program's list of approved natural products are not permitted (animals requiring antibiotic treatment must be marketed through conventional channels).
- The animal must be clearly identified, so as to be traceable from birth to slaughter.

The National Organic Directory lists organic beef buyers and suppliers around the country. Some market conventionally; others direct-market. (See **Resources** for information on ordering this publication.) For a more detailed discussion of organic certification, and a list of certifying organizations, request the ATTRA publication *Organic Certification*.

Coleman Natural Meats

Based in Colorado, Coleman is the nation's largest producer of certified all-natural beef, and the first to receive a USDA "natural" label. Coleman contracts with more than 600 ranchers throughout the West to produce meat without hormones or antibiotics, and the vacuum-packed cuts are marketed nationwide in many natural and mainstream food stores. Coleman promotes itself as a steward of the environment, educating ranchers about grazing practices that improve range conditions. This appeals to "green market" customers who seek ecologically raised products. Their meat production is advertised as natural, humane, and "unhurried." See **Resources** for contact information.

Natural beef

Under current USDA policy, meat may carry the "natural" label if it contains no artificial ingredients (color, flavor, preservatives, etc.) and is minimally processed. The label must explain the use of the term (e.g., "no added colorings or artificial ingredients" or "minimally processed"). "Natural" production methods must be documented. In popular usage, the term "natural" commonly refers to beef that has been raised mostly on pasture, without routine use of medication. The feed is not necessarily organic.

Pasture-finished beef

The 1997 UC-Davis report on "Natural Beef", in summarizing the history of beef finishing in the U.S., notes that:

> The feeding of high energy, grain-based diets to beef animals prior to marketing is a relatively new phenomenon. Prior to World War II, beef was primarily finished on forage. Beef animals were developed relatively slowly on forage-based diets, were significantly older at slaughter, and aged post-mortem to enhance tenderness...The majority of these animals were marketed through small, community-based packing plants, with the financial rewards for the production and marketing of the product remaining in the local economy (2).

In recent years there has been a resurgence of interest in pasture finishing among North American graziers. The monthly periodical *The Stockman Grass Farmer* is a forum for these new pioneers. Its editor, Allan Nation, proposes that producers of beef cattle begin to think of themselves as grass farmers, with pasture as their main crop. This is an idea whose time has come, though it is not a new idea. Nation quotes a classic reference book, *Forages*, published in 1951 by Iowa State: "The grassland farmers are often craftsmen in the culture and use of grass. [One] takes into account soils, plants, animals, and interrelationships. Adequate acreages of adapted grass-legume combinations are provided, depending upon soil needs. High quality forages are emphasized in livestock production, with grains supplementing rather than dominating the feeding practices" (12). The term "grass farming" reflects the fact that high quality pasture is the prerequisite for healthy animals and healthy profits.

In 1997 The University of Missouri's Forage Systems Research Center completed a five-year study "designed to research the finishing of beef cattle on pasture without the use of a confinement feedlot" (13). According to one of the researchers, animal scientist Fred Martz, "What will push [the practice of grass finishing forward] are people with environmental concerns. Pasture finishing won't ever totally replace feedlot finishing, but if we get to a level of finishing 25% of cattle on pasture, it would be a significant change" (14). To repeat a point made above by Jay Nixon, the wants and needs of beef eaters—the producer's immediate or ultimate customer—are worth considering. Who are those "people with environmental concerns" going to buy their beef from?

Pasture-finished beef (PFB) is lean beef. Sometimes it is finished entirely on pasture; sometimes there is a short period of grain-feeding (as in the case of Laura's Lean Beef). The essential elements of high-quality PFB are high-quality pasture, appropriate genetics, young slaughter age, attention to factors that affect flavor, and aging of the carcass.

- **High-quality pasture.** "Bluegrass, orchardgrass, bromegrass, endophyte-free tall fescue with a 30–50% component of legume should be considered. Alfalfa should not be overlooked if your situation is suitable for it. Tall fescue with high levels of endophyte infection *will not work.* **We need animal gains of 2.0+ lbs. per day** and dirty fescue just won't do it, particularly in the summer...Pastures should be kept vegetative—*no seedheads*—and 6–10 inches in height at turn-in" (15). Management-intensive rotational grazing and other resource-efficient grazing practices are recommended. Several ATTRA publications on rotational grazing and other grass-farming topics are listed in the **Resources** section. Also be sure to check with local Extension and NRCS agents.

- **Genetics.** Good forage-converting genetics is important. This means **fast-maturing breeds that tend to marble on pasture with a lower amount of backfat.** Ontario agronomist Ann Clark recommends using mainly medium-framed, early maturing British breeds (14). Smaller-frame British cattle are well-suited to direct marketing, as families may like the smaller carcass size and smaller cuts of meat. Research at the University of Missouri's Forage Systems Research Center found that medium-frame cattle that finish at 1050–1200 lbs. work well for pasture finishing (15). The researchers used Angus, Gelbvieh, and Hereford crosses. Brahman influence is important in the South for heat tolerance. It is important to note that large-frame cattle bred for feedlot finishing *will not work* for PFB.

- **Young slaughter age.** The most important issue related to **tenderness** of beef is the age of the animal at slaughter. Plan to have pasture-finished cattle **ready for slaughter at 16–22 months of age.** One "problem" associated with PFB that may be solved by slaughtering before 18 months is **yellow fat.** This is a problem due to public perception that beef fat should be white; it is not a true quality issue. The yellow color simply indicates a higher level of beta-carotene (precursor to vitamin A) in the fat of animals finished on forage. "Yellow fat on poultry and beef, extremely orange egg yolks and naturally yellow butter reflect high levels of chlorophyll in the diet and low levels of saturated fat" (16). A direct marketer who educates customers about yellow fat might turn it into an asset indicating a natural, nutritious food. In any case, the consensus among producers seems to be that if animals are slaughtered within the 18-month age range, fat will not appear yellow.

- **Flavor.** The taste of grass-fed beef differs from that of grain-fed beef, although the difference is most often subtle. Studies in Missouri and Alabama have found that consumers could not distinguish between grain-finished beef and beef finished on pasture. Still, **PFB has a reputation for tasting "stronger" than grain-finished beef.** According to researchers at the University of California, "The flavor of the meat is directly linked to the feed available to the animal. The traditional grain-fed product has the advantage of a consistent feed that in turn produces a consistent-tasting product. Grass-fed beef, on the other hand, is reliant on the native forage available...The types of grass can vary from field to field creating a problem in flavor consistency of the meat" (2). Grain supplementation on pasture or a short period of grain feeding before slaughter can reduce or eliminate the "stronger" taste of grass-fed beef. Also, pastures should be managed to avoid plants, such as onions, that can impart an off-flavor. PFB is definitely not synonymous with "bad-tasting." Members of the Tallgrass Beef cooperative in Kansas find that the flavor of their PFB is preferred by their clientele, which includes chefs (14).

- **Aging of the carcass.** While researchers in Missouri found no off-flavors in PFB, "the taste panel did detect a **lack of tenderness when the meat was tested right after slaughtering.**" The researchers re-tested the beef after it had been aged for one, three, and five weeks, and found that the **PFB aged three weeks was equal in tenderness to feedlot-finished beef.** A PFB producer in New Hampshire, who markets under his own label, allows his beef to hang four weeks. He feels that aging is very important to quality. Aging also contributes to the characteristic flavor associated with beef.

As noted earlier, the USDA grading system is based largely on marbling. Because of this, beef finished on pasture tends to grade relatively poorly. In a University of Georgia study that compared carcass quality of PFB and feedlot-finished beef, the USDA grades were split as follows:

Grass-fed: 15% Standard, 70% Select, 15% Choice
Grain-fed: 0% Standard, 45% Select, 55% Choice

The taste panels, however, detected no difference in *eating quality* between the two types of beef. Canadian researcher Paul McCaughey comments, "The taste panel work we've done shows there are many factors affecting eating quality apart from marbling. In fact, USDA experiments have shown that marbling accounts for only about 5% of beef's eating quality—yet marbling is what we base our entire grading systems on" (14).

It is clear that PFB sold conventionally under the present grading system will "take a price kicking—to the tune of $220/head, or up to a 24¢/lb. discount." However, this loss may be offset by cost-of-gain savings. The five-year research project in Missouri showed cost of gain for grass-finished cattle to be as low as $27/cwt., compared to $60/cwt. for feedlot cattle. Land, labor, interest, feed, and all other variable costs were included (14). The Missouri researchers concluded that "cattle can be finished on pasture and the resulting beef will be acceptable for the conventional meat trade...The use of maximum inputs of pasture into the finishing of beef will usually result in the most economic gains as long as cattle are taken to a level of finish to grade Choice and/or Select and market discounts are avoided" (13). But until the conventional market learns to deal rationally with PFB, alternative marketing structures are better suited to this premium product. Rather than being graded and sold on the hoof, PFB is typically custom-processed and direct-marketed to consumers.

There is plenty of evidence that grass-finished beef is more nutritious and healthful than grain-fed beef, and the case is presented definitively by Jo Robinson in her recent book, *Why Grassfed Is Best*. All PFB producers should read this book, and then use it as a reference for educating customers. See **Resources** for ordering information.

Direct marketing

Before beginning an alternative marketing enterprise, it is crucial to understand the differences between commodity marketing and direct marketing. Allan Nation, editor of *Stockman Grass Farmer*, has stated,

> A commodity orientation means that as long as you meet the specs and can stand the price you pretty much tell everyone else to go fly a kite. Such a selfish attitude absolutely will not work in direct marketing...In the U.S., consumers expect an attitude of deference and responsiveness to their wants and needs. If you are unable or unwilling to develop—or convincingly fake—such an attitude, stay in commodity-priced agriculture. However, if you see service to others as a noble calling, don't let the lack of specific marketing or production skills deter you. Aptitudes are rather easily learned. It is our attitudes that are difficult to change and that most often determine our fate (17).

Direct marketing brings the producer and the consumer together in a way that the mass market cannot, and this is its greatest strength and advantage. Direct marketing is "relationship marketing." The first step in building the relationship is identifying your customers, who will not be "just anybody." Your customer base will consist of folks who desire a special product, and their needs should be your first consideration, *before* you actually develop your product. First, talk to potential customers one at a time. Find out what characteristics they value most in a premium beef product—high quality, low price, leanness, organic or "natural" production, home delivery, particular cuts, and so on. Develop a brand name and a marketing/packaging strategy that capture the most important of these elements and preview your "brand" to your intended customers.

When you feel you have the right combination to appeal to your niche market, *then* develop the actual product. This approach can conserve resources, including your limited capital. It is both risky and inefficient to develop a product first and *then* try to find a market for it. Remember that the "product" is much more than the beef itself; the product is also service, packaging, your farm's identity, your production philosophy, and even price. For your product to stand out from the competition and attract repeat customers, it must be carefully differentiated from other types and brands of beef.

Take time in developing your beef product and working the kinks out of the production process. Begin by making the product for yourself and your family. Next, produce it for your friends who have tried it, liked it, and asked for it. The last step should be marketing to consumers. Allan Nation writes, "If you are considering getting into direct marketing, don't bet the farm on it. Keep doing what you are doing for a living and start learning and experimenting on a small scale...[T]he best guinea pig for this period of trial and error is yourself, your family and your friends." If your family and friends are not crazy about your grass-fed steaks and don't request more, "you are still in your apprenticeship period and are not yet ready to be in business." Don't try selling anything that you yourself are not completely satisfied with. "A new business needs virtually 100% customer satisfaction from day one to survive. This is because any new business is necessarily drawing from a very small customer base" (17).

The authors of the University of California study, *Natural Beef: Consumer Acceptability, Market Development and Economics*, recommend transferring only a portion of your cattle production into the new system at first. This will give you an opportunity to learn the ups and downs of alternative marketing while putting only a small percentage of your income at risk. Diversify your production a portion at a time, increasing the number of animals in the new system as you develop retail skills and market connections (2).

While you have "relationship marketing" on your side, the major beef packers have economy of scale on theirs. Since you will not be able to compete with mainstream beef producers in terms of price, you must determine the appropriate premium to place on your product. Pricing is a critical and difficult task, and under-pricing is a common pitfall. The price has to cover costs of production, re-capitalization of the enterprise, *and* an acceptable profit. Profit should be planned for at the outset. If profit is thought of as "whatever is left over" there will probably be no profit. At the same time, an over-priced product will not sell. Your initial market research should determine market size, market share, and the price your niche consumer is willing to pay for premium beef. Is that price sufficient to make this a profitable venture?

Joel Salatin, a nationally recognized grazier in Virginia, has been very successful at raising and marketing pasture-finished beef. He gains $200-$300/head net by direct marketing to 400 regular customers (16). His book *Salad Bar Beef* presents a proven production and marketing system "that can make an excellent profit from a small cow herd regardless of the commodity price of calves." "Salad bar beef" is Salatin's consumer-friendly term for lean, healthy, tasty meat raised locally on fresh, high-quality pasture. Salatin describes a three-pronged approach to developing a clientele for this type of beef:

- **1) Samples.** "We knew that the only way to get people to buy salad bar beef was to get it into their mouths. We gave samples to anyone we thought might be interested. Over the years, we've never given anything away that didn't come back fourfold...Free samples are one of the underpinnings of successful marketing. We found a tremendous prejudice to non-grain beef. People by and large just knew it would be tough, stringy and gamey. To overcome that, we had to introduce them to it without any risk. The response has always been tremendous to this technique."
- **2) Education.** "We put together a slide program about our farm, titled it 'Environmentally Enhancing Agriculture' or whatever the group wanted to call it, and began making presentations for local organizations" such as Rotary, Kiwanis, Women's Clubs, Garden Clubs, and American Association of Retired Persons (AARP). "The program is educational, not a sales pitch. But at the end, quite innocently, I'll say, 'Now if any of you would like to participate in this type of agriculture, I happen to have some order blanks with me and you're welcome to sign up."

  Other educational methods include brochures, newsletters, newspaper articles, and one-on-one conversations. It is up to you to educate potential customers on how and why your beef is *different* and *better* than the conventional product. Education should include instructions on proper cooking as well. Salatin points out that the common fast-cooking methods are suited to marbled USDA Choice, but not to grass-fed lean

beef. He recommends slow cooking his beef for the best taste, greater tenderness, and improved digestibility.

- 3) **Customer Appreciation.** This gets to the heart of "relationship marketing." When the consumer knows and trusts the producer personally, the relationship built between them is not easily broken. Good sellers know and use their customers' names. Loyalty helps bring in repeat customers. The greater the loyalty and satisfaction, the higher the likelihood of repeat business even though beef may be available at the grocery store at a cheaper price. "The two things supermarkets cannot do is provide high-quality food and offer a relationship." By giving detailed, personal service to his customers, Salatin ensures that they will spread the word about his product (16).

Salad Bar Beef is recommended reading for anyone considering alternative beef marketing. It covers both production and marketing topics, all from the perspective of a successful alternative beef operation. See the **Resources** section for ordering information.

Salatin sells his beef and other farm products direct from the farm, taking orders once a year by mail and phone. Other potential outlets for direct sales to consumers include farmers' markets and local grocery or health food stores interested in carrying farm-fresh products. Stores, however, are usually uninterested unless you can ensure a steady supply.

Finer restaurants constitute another possible outlet. Many chefs appreciate the flavor and freshness of locally raised, grass-fed beef. Some restaurants have developed informational packets on where their ingredients come from, "to build rapport with customers and set the restaurant apart from other dining experiences" (2). Quality and consistency will be this market's main concerns. Chefs may be interested in prime cuts as the majority of their purchase, making it necessary to develop other marketing outlets for hamburger and roasts. Marketing to restaurants may provide the greatest return on investment for primal cuts, but is generally smaller in volume and requires more work per unit of sales (2).

Taking your operation from live sales to marketing of meat may require changes in your production focus. Inventory management will be a primary issue. Beef producers who have had a short calving and marketing period for the sake of efficiency may have to time production to match variable consumer demand. Restaurants often have a highly variable demand for product, so that you may either have to carry inventory or be able to move products quickly from live to useable form. Selling directly to consumers as Salatin does could allow you to focus on seasonal production. Freezing beef increases the ability to manage inventory, but adds storage charges to the cost of production. Generally, the larger the scope of your enterprise and the more outlets you have, the less challenging inventory management will be (2).

This section is intended only as an introduction to some aspects of direct marketing of beef. ATTRA's *Direct Marketing* publication provides more detailed information on enterprise evaluation, marketing research and planning, promotion and publicity, pricing and profitability, and direct market alternatives. Also refer to the **Resources** section of the present document, which includes sources of information and assistance for creating a small business, as well as contact information for beef producers who direct-market. *Your best resource for information and inspiration is fellow producers, whose experience can save you many surprises and missteps.* For a small-scale producer's firsthand account of the direct-marketing "learning curve," see the enclosure "Direct Marketing Farm-Raised Beef" by Lisa Cone Reeves.

Legal Considerations

Marketing activities are affected by a wide variety of laws and regulations at federal, state, county, and city levels. While regulations vary by type of enterprise and location, there are some general rules to be aware of in all areas of direct marketing. Some of these legal considerations include the type of business organization (sole proprietorship, partnership, etc.), zoning ordinances, small business licenses, building codes and permits, weights and measures, federal and state business tax issues, sanitation permits

and inspection, food processors' permits, and many, many others. If you plan to employ workers, there will be still more requirements to meet, such as getting an employer tax identification from the IRS and getting state workman's comp insurance. Environmental laws are also becoming increasingly important to farmers.

Always check with local, state, and federal authorities before trying to market any food product. Processed foods are heavily regulated to protect public health. Stay informed, since rules and regulations change often, and keep good records to prove that you're in compliance.

Adequate insurance coverage is essential. "The closer you get to the consumer direct marketing, the higher the liability risk" (2). Insurance that every operator should have includes liability insurance for your product and your premises, employer's liability insurance to protect you if employees are injured, and damage insurance to protect against loss of building, merchandise, and other property. General comprehensive farm liability insurance often does not cover on-farm marketing or direct marketing operations. See **Resources** for information on *The Legal Guide for Direct Farm Marketing* by Neil Hamilton of Drake University Law School, a comprehensive primer on the many legal issues that surround direct marketing of agricultural products.

Processing and packaging

Processing is an important consideration for direct marketers. Custom facilities are generally cheaper to use. Large commercial, federally inspected plants may not be geared to do custom butchering for the small beef producer. Producers should contact their state department of agriculture for regulations about meat processing and sale to the public.

Beef must be slaughtered and inspected at a federal- or state-approved facility in order to be sold to individuals, as in the freezer beef trade, or to restaurants. If beef is processed at a custom facility that is not federally or state inspected, then it can only be sold prior to slaughter (15). This means the cattle must be sold by the head or by liveweight, which doesn't account for wide variations in dress-out percentages between animals. Joel Salatin deals with this dilemma by selling his animals for $1 per head and then adding shipping and handling charges based on carcass weight. However, we cannot recommend this practice. The liability risk involved should not be underestimated.

Producers considering constructing their own slaughtering and processing facility should remember that it is very important to comply with federal, state, and local regulations for processing—the axiom "ignorance is not an excuse" applies here. Farmers who intend to process on-farm should be aware of all federal, state, and local regulations. Your state departments of agriculture and health will have information about regulations. Your county Extension office should be able to direct you to the county agencies that regulate zoning, health, and other local regulations.

In 1996, the USDA's Food Safety and Inspection Service (FSIS) announced implementation of new rules meant to ensure the safety of meat products. A major component of the regulations is the Pathogen Reduction/Hazard Analysis and Critical Control Points (HACCP) system. FSIS works with small and very small processing plants to make sure they comply with the HACCP. All facilities must comply by January 25, 2000. To learn more about HACCP mandates, or to obtain copies of FSIS-developed models for

Production Note: To castrate or not to castrate?

Some producers who direct-market do not castrate their bulls (producers who market conventionally do castrate since they get docked for intact males). Bulls put on weight 17% faster than steers and make leaner gains, giving them a higher dressing percentage. However, they may need to be slaughtered young (by 18 months) to minimize gristle, and run in a separate herd to prevent unplanned breeding. But separating the herd may not be convenient. Joel Salatin, for example, chooses to castrate so that he can run all his cattle in one herd.

designing HACCP-compliant small facilities at the least cost, contact FSIS (see **Resources** for contact information).

Retail and individual meat sales require packaging in accordance with state food laws. Since good packaging enhances sales, label design and presentation are important. Vacuum packaging provides superior product protection as compared to hand-wrapping. Feeding high levels of Vitamin E for two weeks prior to slaughter increases the shelf life of meat (2).

Cooperatives for alternative beef marketing

Co-op marketing can be adapted to alternative markets. A great example is the CROPP cooperative, which markets certified organic dairy, eggs, produce, and meats nationally under its "Organic Valley" brand name. Formed in 1988, CROPP is now the largest producer of organic dairy products in the U.S. Among the more recent additions to their product line is pasture-finished beef. CROPP is a farmer-owned and operated marketing cooperative, consisting of over 190 small to mid-sized family farms in 10 states, from Maine to Washington. See the **Resources** section for contact information. For another example, read the enclosed article profiling a producers' marketing co-op in Kansas that specializes in "all natural" beef.

Conclusion

The shortcomings of the conventional marketing system have made the time ripe for a return to marketing beef directly from ranches to consumers. Niche marketing can give the farmer a larger share of the food dollar and a higher return on each unit sold. Adding value or marketing some minimally processed farm products directly to the consumer is a way of enhancing financial viability. While successful direct marketing may or may not increase profits, it will provide protection from fluctuating live-market prices. However, direct marketing is a labor-intensive job demanding time and effort, creativity, ingenuity, sales expertise, and the ability to deal with people in a pleasant and positive manner. Producers must be absolutely sure they are ready for the job.

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Wulf, Duane N. 1999. Did the locker plant steal some of my meat? The Shepherd. January. p. 12-13.

Resources

Conventional Marketing:

Cowboy Marketing
A Primer On Cattle Marketing Practices That Will Increase Your Bottom Line
By Jay Nixon. 1995. 135 p.
Available for $10.95 plus $2 shipping (TX residents add $0.90 tax). Make check payable to:
Cowboy Marketing
302 E. Buchel
Karnes City, TX 78118
(830) 780-2455

Managing for Today's Cattle Market and Beyond
http://ag.arizona.edu/arec/WEMC/TodaysCattlePub.html
A collection of 36 Extension reports relating to all aspects of today's conventional cattle market, put together by the Western Extension Marketing Committee. Topics include retained ownership, cooperatives, the cattle market environment, developing a market plan, comparing your market opportunities, and many others. Adobe Acrobat Reader is required to view this document on-line. Print copies (125 pages in a binder) are available for $20 each from:
Chris Bastian
Box 3354 University Station
University of Wyoming
Laramie, WY 82071
(307) 766-4377
e-mail: bastian@uwyo.edu

Alliances/Cooperative Marketing:

USDA Rural Development/ Cooperative Services
Stop 3250
Washington, D.C. 20250-3250
Telephone: (202) 720-7558
e-mail: coopinfo@rurdev.usda.gov
http://www.rurdev.usda.gov/rbs/coops/cswhat.htm
The goal of the Cooperative Services program of USDA's Rural Business-Cooperative Service (RBS) is to help rural residents form new cooperative businesses and improve the operations of existing cooperatives. To accomplish this, Cooperative Services provides technical assistance to cooperatives and those thinking of forming cooperatives. It also conducts cooperative-related research and produces information products to promote public understanding of cooperatives.

Alternative Marketing Programs
Cattle Fax. 1998. 39 p.
This report focuses on the economics of marketing through alliances, and explains the formulas and grids used in determining price premiums and discounts. Includes a listing of a number of alliances, with contact info and specifications (some of which may be outdated by now. Ask Cattle Fax about updates of this publication.) Available for $20 from:
Cattle Fax
PO Box 3947
Englewood, CO 80155
(303) 694-0323
(800) 825-7525
e-mail: cfax@cattle-fax.org
http://www.catle-fax.com/

Niche and Direct Marketing:

Alternative Meat Marketing

This free ATTRA publication is a comprehensive introduction to producer-marketing of meat products. Pitfalls, producing and packaging for quality and consistency, direct marketing options, value-added products, food safety and labeling, niche markets, resources.

Direct Marketing

This free ATTRA publication covers the importance of marketing, market research, niche marketing, value-added marketing, pricing, promotion, and more, and includes a list of further resources. Contact ATTRA for a free copy.

Natural Beef: Consumer Acceptability, Market Development, and Economics
by Annette Levi, Dave Daley, Steve Blank, and Glenn Nader UC SAREP 1996–97 Research and Education Report. Available on-line at:
http://www.sarep.ucdavis.edu/grants/reports/nader

For a print copy of this report, contact:
Glenn Nader
University of California Cooperative Extension
142-A Garden Highway
Yuba City, CA 95991
(530) 822-7515
e-mail: ganader@ucdavis.edu

Salad Bar Beef
By Joel Salatin. 1995. 368 p.

Available for $35 plus s/h from:
Fertile Ground Books
P.O. Box 2008
Davis, CA 95617-2008
(800) 540-0170; (530) 297-7879
e-mail: books@agribooks.com
http://www.agribooks.com

The Legal Guide for Direct Farm Marketing
By Neil D. Hamilton. 1999. 235 p.

An up-to-date, well-written primer on all the legal considerations related to direct marketing of agricultural products. Underwritten by a USDA SARE grant. Includes a chapter on marketing of meat. Available for $20 from:
Drake University Agricultural Law Center
2507 University Avenue
Des Moines, IA 50311–4505
(515) 271-2065

Emerging Markets for Family Farms: Opportunities to Prosper Through Social and Environmental Responsibility
Center for Rural Affairs. 1997. 45 p.

This report presents strategies for farmers to market high value products. It contains results from a national survey describing what it takes to be successful, barriers to overcome, products with the greatest potential, and how to develop markets. Available for $7 from:
Center for Rural Affairs
101 S. Tallman Street
PO Box 406
Walthill, NE 68067
(402) 846-5428; Fax: (402) 846-5420
e-mail: info@cfra.org
http://www.cfra.org

USDA Farmer Direct Marketing Website:
http://www.ams.usda.gov/directmarketing

A national directory of farmers markets, list of upcoming conferences, a direct market newsletter and resources by state.

Starting in 1999, the USDA's Agricultural Marketing Service (AMS) has announced a plan to help small farmers sell their agricultural products directly to consumers. Within the next three years, the AMS will create new direct marketing networks and a one-stop information clearinghouse, as well as developing training and information programs for farmers market managers, and small farmers. The "Farmer Direct Marketing Action Plan is available from Errol Bragg at (202) 720-8317, or on-line at:
http://www.ams.usda.gov/directmarketing/frmplan.htm

Organic Beef:

Organic Certification.

This free ATTRA publication covers legal requirements, new federal standards, types of programs, and a comprehensive listing of state, national, and international certifying organizations. Contact ATTRA for a free copy.

National Organic Program, USDA
Ted Rogers
202-205-7804
http://www.ams.usda.gov/tmd/organic

The National Organic Directory
Community Alliance with Family Farmers

An annually updated, 400-page "yellow pages" of the organic industry. Includes over 1,000 listings of farmers, wholesalers, farm suppliers, support businesses, certification groups and resource groups. Organic commodities bought and sold are extensively indexed, and explanations of state and federal organic laws are provided. Costs $47.95 (plus $3 shipping. California residents add $3.48 sales tax.)

CAFF
P.O. Box 363
Davis, CA 95617
(800) 852-3832
http://www.caff.org

Upper Midwest Organic Livestock Producers Directory
Cooperative Development Services. 1999. 76 p.

Intended for livestock producers in Iowa, Minnesota, North and South Dakota, and Wisconsin. The Directory contains contact names, addresses and phone numbers for meat processing facilities, certification agencies, producer cooperatives, publications, etc. Order for $5 (shipping and handling included) from Cooperative Development Services. Call for their complete publication list.

Cooperative Development Services
30 West Mifflin Street, Suite 401
Madison, WI 53703
(608) 258–4396; Fax: (608) 258–4394
e-mail: darcylk@inxpress.net

Pasture-Finished Beef & Grass Farming:

The following ATTRA publications are available free of charge:

- *Sustainable Beef Production.* Grazing and feeding options, low-stress handling, alternative parasite control.

- *Beef Farm Sustainability Checksheet.* Assessment tool to help plan a whole farm in which beef production is a major enterprise. Management of animals, forage, soil, watershed, marketing, economics and goal-setting are addressed in the 200 questions.

- *Rotational Grazing.* How to manage pastures and grazing animals to more profitably utilize the farm's resources.
- *Sustainable Pasture Management.* Managing fertility and pests, grazing systems, conserved forages, maintaining productivity, additional resources.

- *Nutrient Cycling in Pastures.* Examines elements of pasture ecology, including soil organisms, plants, and animals. Discusses their interactions and ways to enhance nutrient cycling with minimal losses to air or ground and surface waters.

- *Meeting the Nutritional Needs of Ruminants on Pasture.* Impact of grazing management on nutrition, supplemental feeding on high quality pasture, feed profiling, feed budgeting, matching livestock and forage resources for efficient pasture use.

- *Matching Livestock and Forage Resources in Controlled Grazing.* Grazing objectives, maintaining botanical balance, encouraging rapid growth, compromising between yield and quality, minimizing mowing, producer goals.

- *Introduction to Paddock Design and Fencing-Water Systems for Controlled Grazing.* Basics of paddock design, considerations in fencing and water technology, enclosures.

- *Assessing the Pasture Soil Resource.* How to take a soil sample and an easy way to assess soil biological activity and water infiltration. Assessment sheet included.

American Farmland Trust
http://www.grassfarmer.com

American Farmland Trust's information site on grass-based farming systems. Grassfarmer.com brings online visitors information on a variety of topics related to grazing and grass farming. Be sure to check out the many links to further grazing information on-line.

Why Grassfed Is Best
by Jo Robinson. 1999. 107 p.

Available from the following address for $7.50 a copy, plus $2.50 s/h (WA residents add 8.4% sales tax). Discounts for orders of two or more copies. Make checks payable to Columbia Media.

Columbia Media
2401 N. Cedar
Tacoma, WA 98406
(206) 463-4156

The Stockman Grass Farmer
P.O. Box 2300
Ridgeland, MS 39158-2300
(601) 853-1861

Published monthly. $28/1 year; $50/2 years. The following books by SGF editor Allan Nation are

available from the magazine. Call the number above for prices and ordering information.

Pasture Profits with Stocker Cattle. 1992. 192 p.

Paddock Shift: Changing views on grassland farming. 1997. 184 p.

Grass Farmers. 1993. 192 p.

Processing and Labeling:

USDA/FSIS/OPPDE
Animal production Food Safety Staff
1400 Independence Ave, SW
Washington, D.C. 20250-3700
(202) 690-2683
http://www.usda.gov/agency/fsis

HACCP Implementation:

http://www.fsis.usda.gov/OA/haccp/imphaccp.htm
HACCP hotline: (800) 233-3935
e-mail hotline: Haccp.Hotline@usda.gov

Alternative Beef Producers/Marketers:

CROPP Cooperative/Organic Valley
507 W. Main St.
La Farge, WI 54639
(888) 444-6455
http://www.organicvalley.com

Polyface, Inc.
Joel Salatin
Rt. 1 Box 281
Swoope, VA 24479
(540) 885-3590

Laura's Lean Beef
2285 Executive Drive
Suite 200
Lexington, KY 40505
1-800-487-5326
e-mail: llb@laurasleanbeef.com
http://www.laurasleanbeef.com

Coleman Natural Products, Inc.
5140 Race Court
Unit 4
Denver, CO 80216
1-800-442-8666
http://www.colemannatural.com

Alaska Natural Beef
Bering Pacific Ranch
(888) 384-5366
http://www.alaskanatural.com

Van Wie Natural Foods
6798 Route 9
Hudson, NY 12534
(518) 828-0533
http://www.vanwienaturalmeats.com

Ervin's Natural Beef
128 E. 19th Street
Safford, AZ 85546
(520) 428-0033
e-mail: info@ervins.com
http://www.ervins.com

Lasater Grasslands Beef
Matheson, CO 80830
(719) 541-2855
e-mail: lasater@rmi.net
http://www.lasatergrasslandsbeef.com

Homestead Healthy Foods
Rt. 2 Box 184-A
Fredericksburg, TX 78624
(830) 997-2508

Some producers and marketers of natural and grass-fed beef products who are willing to share information:

Debbie Hawkins
Saguaro-Juniper Natural Beef
P.O. Box 1884
Benson, AZ 85602
(520) 212-4769

Tom & Martha Mewbourne
Thorntree Farm
Route 2 Box 776A
Nickelsville, VA 24271
(540) 479-3057

Rob & Alanna Reed
Overlook Farm
233 Spruce Rd.
Karns City, PA 16041
(724) 756-0540

Mike, Jennifer & Johanna Rupprecht
Earth-Be-Glad Farm
RR 2 Box 81
Lewiston, MN 55952
(507) 523-2564

David Schafer & Alice Dobbs
Schafer Farm
56 SW 52nd Ave.
Trenton, MO 64683
(660) 359-6545

Dennis & Brenda Wohlgemuth
Box 2, Site 6, RR #1
Crooked Creek, Alta.
Canada T0H 0Y0

Kent & Lisa Shipe
Rt. 1 Box 423
Mathias, WV 26812
(304) 897-5136

The electronic version of **Alternative Beef Marketing** is located at:
http://www.attra.org/attra-pub/beefmkt.html

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Profile of a Kansas Beef Co-op: From Ranch to Retail Supermarket

by Lisa Bauer • Lincoln, Nebraska

This is one of an ongoing series of articles on the USDA's Sustainable Agriculture Research and Education (SARE) program. Projects sponsored by SARE feature innovative ways to boost farm profitability, enhance rural communities, and protect the environment. Contact the national SARE program at 301-405-5270; www.sare.org or the North Central SARE program at 402-472-0265; www.sare.org/ncrsare.

Kansas producers Diana and Gary Endicott have big ideas for their small farm.

In their application for a SARE producer grant, they envisioned following their organic beef from the farm to a rural slaughtering plant to a small processor to a major supermarket and finally to a satisfied customer: alternative marketing in the mainstream food system.

In today's perilous conventional ag markets, realizing this kind of vision takes initiative, energy, and a lot of courage—the Endicotts have an abundance of all three.

Farming in southeast Kansas on their 400-acre certified organic Rainbow Farms, Diana and Gary grow greenhouse vegetables and grain and hay, and run a small cow/calf operation.

Fulfillment of their goals began in the mid-1990's. They wanted to sell tomatoes at a large, upscale, conventional grocery store—Hen House Markets—with more than 10 stores throughout Kansas City. Diana said she simply took her tomatoes to Hen House and passed out samples to produce managers.

With her trademark enthusiasm, Diana added, "We went into that store and not only tried to sell our product, but we tried to sell ourselves."

Hen House started buying tomatoes from the Endicotts. Not long after that, she approached Hen House meat managers about selling hormone- and antibiotic-free, corn-finished beef. Hen House, coincidentally looking for a branded beef product, began buying Endicotts' beef. When demand exceeded supply, the Endicotts searched for other producers in their area who could provide natural beef to Hen House.

photo courtesy USDA SARE

Diane Endicott at a Hen House Market in front of the co-op's All Natural Beef display counter.

Diane added, "I started as someone who knew little about marketing," which is an incredible statement, considering that in five years she has led marketing efforts for a farmer cooperative that has found a profitable niche in a major supermarket chain.

Pooling With Other Producers for Profit

Cooperatively producing and marketing allows producers to participate in the value-added sector of the marketplace, while sharing risk, knowledge, and profits.

"The meat market is very competitive," Diana said. "We're all competing for shelf space in the supermarket, and we don't have the volume to compete with the large producers. We're trying to develop the local markets, and the best way to do this is to have many producers band together."

In 1997, Diana and other area farmers decided to form a closed cooperative to ensure quality and consistency in their Hen House beef. Ten producers formed the All Natural Beef Cooperative to sell through the grocery chain under the Nature's Premium All Natural Beef label. The co-op has added 10 more members since then.

To qualify for membership in the co-op, cattle must be raised without growth hormones or the use of sub-therapeutic antibiotics, on a "small family farm"—where family income is primarily generated from the operation and the family members are actively involved in labor.

Most cattle raised in Diana's co-op are Angus crossbreeds. Cooperative producers must raise the calves or know the source of them. Animals

are free-ranged and finished for 90-120 days on a 50% corn ration. Grain used to feed out calves does not have to be organically grown; however, most producers in the co-op try to be as natural as possible in their production methods.

Primarily third and fourth generation farmers, All Natural Beef Co-op members come from central and southeast Kansas and west central Missouri. They operate diversified farms using certified organic, transitional, or sustainable practices.

Organizing farmers in a formal cooperative was challenging. The Endicotts read a lot, networked with knowledgeable people, and attended meetings to learn about technicalities such as articles and bylaws, business plans, feasibility studies, tax registration, and trademarks.

It took a lot of legwork, but she brought her co-op to successful fruition in a fairly short time period.

Amazingly, Diana has taken over most marketing duties of the co-op—functioning with no paid staff—in a market where her competitors include numerous branded beef programs. Meanwhile, she and Gary have learned from other co-op members about production practices in raising organic beef.

"A cooperative is like a family. You put together a diverse group of people and you have to respect each other's knowledge and opinions," Diana said. "Each of us tries to do what we think we can do best. Getting people together who have different skills and attributes really helps the business."

The All Natural Beef Producers Co-op is presently slaughtering 10 head of cattle per week for Hen House, and they plan to increase that number. Diana said they are realizing $35-$55 more per head than if they sold their cattle on the open market.

An Unconventional Path to Market

As if the challenge of organizing a producer cooperative was not enough, Diana and her troupe had to find a small plant to slaughter their beef and a small processor to accommodate the co-op's need to follow each cut from field to grocery.

In order to sell their beef at all Hen House Markets, located in both Kansas and Missouri, Diana had to slaughter and process in federally inspected facilities. This meant meandering the maze of USDA regulations.

They found a meat slaughtering plant—Adrian Meats, in Adrian, Missouri, and a third generation meat processing plant—Sambol Meat Company, in Kansas City, Kansas, that dry-ages and distributes the co-op's beef.

Diana worked with inspectors and bureaucrats at both the federal and state levels to understand and comply with the strict labeling and food safety laws. In fact, she wrote her own labels, with very little assistance.

"Anyone can do this," she said. "I just formatted some information by looking at other labels. I would send it in to be approved, and the USDA Food Safety and Inspection Service would send it back with corrections, and I'd send it back in."

Looking at labels and ear tags on the cattle, the co-op members can follow animals through feeding, transporting, processing, and retail sale. Using detailed information recorded on a producer data sheet, farmers can match final cuts with specific animals.

"From the data sheet, we can find out which beef performed well and which didn't," Diana said. A spreadsheet for each carcass indicates hot weight, weight of individual cuts, and how much each cut will sell for.

At first, producers were frustrated with the detailed paperwork and confusion of spreadsheets. However, because this information allows farmers to learn more about their beef quality, Diana said, "They learned to read the spreadsheets pretty quickly."

Another topic that required research was pricing of their meats. Diana said they took into account five-area daily weight averages, USDA five-year average primal prices, and other branded beef program pricing grids to develop their own pricing spreadsheet.

Diana added that the middle meats are easiest to sell, while, "end meats are the hump we needed to get over."

With assistance from Kansas State University students, they now process chucks and roasts into homemade ethnic sausages at Ragan Meat and Sausage Co. in Kansas City, Kansas, to increase their profits. Sausages are sold as a value-added product.

Diana admits that independently taking animals from slaughter to store has inefficiencies—costing nearly double what it would cost to slaughter conventionally. But she sees this as incentive to reap higher profits as they increase efficiency.

Cattle in the Hen House

After slaughter and processing, Nature's Premium All Natural Beef finds a prime spot of shelf space at Hen House Markets. At a Hen House butcher block, customers can choose from a variety of mouth-watering All Natural Beef cuts, including strip steaks, rib eyes, filet mignons, ground chuck, and back ribs.

Diana makes her co-op's entry into this upscale grocery market sound easy. Hen House is unique in its commitment to local and regional food producers and processors, and meat managers there happened to be looking for a branded beef product, which helped. It still took plenty of store visits and free samples.

"The retail meat mangers and meat employees behind the counter can make or break sales of meat products," Diana said. "This is especially true of new meat products."

She and her co-op partnered with Michael Boland, an agricultural economist at Kansas State University, to survey meat manager attitudes towards Nature's Premium All Natural Beef.

Five participating meat managers were given a total of nearly $1,500-worth of meat products to prepare and judge for 15 consecutive weeks.

Thirty-eight responses collected information on product attributes from price to flavor to attractiveness.

Information from the survey not only provided producers with valuable production and marketing information, but helped cement positive, reciprocal relationships with meat managers.

With support of the meat managers, the co-op now has lead-off counter space in eight Hen House stores throughout Kansas City.

Connecting With Consumers

As with any alternative marketing strategy, selling at supermarkets requires large doses of consumer contact and education.

Diana has helped market the co-op's beef products by collecting market research, doing in-store food demonstrations, and offering various buying incentives.

A Kansas State student developed a market survey for consumers for a master's program. After Gary Endicott built and developed a computer program for an interactive kiosk, the Endicotts brought the computer to Hen House so consumers could take the survey and then receive a beef coupon for their efforts. Consumer opinions from the survey are highly valuable, not only for the co-op, but also for Hen House.

"Demo, demo, demo, market, market, market," said Diana when talking about in-store beef samples for customers. She hired restaurant chefs to prepare samples so Hen House shoppers could taste All Natural Beef, and then buy some with coupons. Taste testing also gave Diana an opportunity to bring in producers from the co-op to meet with customers, fostering a valuable urban/rural bond, where consumers can learn more about rural communities and family farms, and producers can learn what urban consumers are looking for in their food products.

Food demonstrations also allowed Diana to introduce and gather survey information for new products, such as their Nature's Premium All Natural Beef Franks.

She has had customer contests, allowing her to gather names and addresses on entry cards for a database. The co-op has given away free All Natural Beef grill packs, and Diana has also partnered with the Bourbon County, Kansas, tourism division to give away free weekends at southeast Kansas bed and breakfasts with a purchase of her beef. Diana sells more beef and gets more addresses for her database, and Bourbon County B&B's get some low-cost advertising.

In the future, Diana plans to add a shopper card scanner to her kiosk, allowing her to use the store's mailing list and build a database of customers to whom she can send newsletters and other information about their beef products.

Lessons From the Pros

Spending endless hours reading, networking and attending meetings and conferences, not to mention working the farm operation, has been exhausting for the Endicotts.

"But I just go, go, go, then take a breath and go again," said Diana, on her way home from a meeting where she spoke to a diverse audience at the University of Nebraska.

Unlike producers who are protective of markets, Diana believes that there is room for a lot more direct marketing, and that saving family farms means educating other farmers about profitable alternatives. The Endicotts are gracefully willing to share lessons they have learned.

One of the primary lessons has been the usefulness of mutually beneficial relationships, such as allowing graduate students to do market research for a master's project or working with Bourbon County tourism to support local businesses and simultaneously promote natural beef through contests and giveaways.

She suggests that producers build relationships with private and governmental agencies, organizations, and businesses. Diana said that her first producer grant from the USDA's North Central SARE program gave the project a lot of credibility and created more interest from other funding organizations.

"It is working with people like Tom Moore (meat director of Hen House) and Pat and Mary Oates (of Adrian Meats) that have made this project so very rewarding to me," Diana added, speaking positively about their relationships with processors and retailers.

The connection between survival of farm communities and the rural businesses is obvious to Diana. Working with small, local processors and meat lockers boosts rural economies. Working with grocery stores helps foster a necessary urban/rural connection that benefits both consumers and producers in selling locally.

Diana warns producers that the road will most likely be rough, but producers should persist and be prepared to sacrifice for awhile until they get a project going.

"Do the legwork process yourself and hire as little done as possible," she said. "This will allow you to understand the necessary procedures from the farm through the market."

Future Visions

The Natural Beef Cooperative, with Diana's marketing leadership, has many plans for the future. Eventually, they would like to vertically integrate the operation by partnering with others to buy a processing facility.

To increase producers accountability to label claims, co-op members will also be working with ATTRA on a "beef farm sustainability checklist".

Educational efforts will continue to be a hallmark of the All Natural Beef Co-op. Producers will invite meat managers and other non-farmers on tours of cattle operations and processing facilities, and Diana will continue to use the kiosk in gathering consumer survey information.

Diana also wants to publish a newsletter to link producers and consumers. Eventually, the newsletter will be online when the All Natural Beef Co-op develops a website.

Their biggest vision: keeping the small farm viable. As the co-op says in their beef promotional materials, "They believe and practice sustainable agriculture not only to achieve the health and environmental benefits, but also to economically produce beef a new way to hold on to an old way of life—the family farm."

For more information on the All Natural Beef Cooperative, contact Diana Endicott at 316-939-4933, or the North Central Region SARE office at 402-472-0265. •

Natural Beef: Consumer Acceptability, Market Development and Economics

A Cooperative Project Between;
California State University, Chico Agriculture Department,
University of California Cooperative Extension

Authors

Annette Levi - Ag Economics Professor
Dave Daley - Animal Science Processor
Steve Blank - UC Extension Economist
Glenn Nader - UC Extension Farm Advisor

UC SAREP 1996-97 Research and Education Report

Natural Beef: Consumer Acceptability, Market Development & Economics

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Summary
This project provided insight to the viability of grass fed beef marketing in California. Consumer surveys and focus groups indicated an interest in products that were not implanted or given antibiotics. Restaurant purveyors were more interested in linkages between production ranches and their product. They were concerned about the leanness of the product and the ability to deliver consistent quality that is required for their businesses. An example marketing plan was developed to provide insight and strategies for potential product development for Northern California.

Four case studies were developed to provide insight into actual market development through past rancher activities. These case studies provided great insight to the issues that needed to be addressed prior to considering a marketing plan. A flow chart was developed to visually illustrate the different marketing outlets and the issues that arise trying to address them. Based on these actual experiences, a review document was developed of the issues that need to be addressed and how to logically approach them in a systematic fashion. A business plan model was developed to provide potential ranchers with a frame work of which they could think through the business side of producing grass fed beef. A sample budget was included for the ability to analyze individual operations. Because of the small economy of scale, transportation was the most sensitive item in the expenditures. The major consideration in grass fed beef is location. One is the location of the nearest USDA inspected processing plant. The second is the location of the target market. Thus by strategically locating the grass fattening operations near a processing plant and the target market greatly reduces the operational costs. Ranchers also need to define their product's yield of retail cuts and it's quality in both tenderness and flavor under their existing management systems.

Lessons Learned

The lessons learned in this project came very expensive to some of the four case studies that we reviewed. We hope this publication will save the duplication of these expensive learning curves. One operator spent twelve thousand dollars on advertising and at the end of the project understood more about marketing than they had before, but at a great expense. Another case study individual found out they needed two million dollars of product liability insurance to go to a farmer's market. They also found that giving away free beef samples instead of advertising is highly regulating by the county environmental health office in which the farmer's market is located. It is a complex interaction between an initial start up costs and economy scale. Concerns over learning with large numbers of animals being diverted into this new marketing scheme are offset by the inability to achieve efficiency with small numbers. As the beef market gets further concentrated, it is more difficult for individual ranchers to compete with large processors economies scale. Although consumers indicate they would be interesting in paying more for a grass fed beef products, they still refer back to the relevantly low price retail market. There are many hurdles that ranchers must address in forming a new marketing direction beyond the live product. They include liability insurance, transportation, inventory management, labor laws, county environmental health requirements, packing and advertising. Ranchers are traditionally encouraged by the extension service to consolidate their caving schedules to improve their efficiency in operation of the ranch. This marketing stream could dramatically change that to a requirement to have a year around production, to address the year round consumer demand. Location of the ranch to a USDA inspected processing plant could be the key, most by reducing costs and increasing the potential for success. That coupled with the location of the targeted market will greatly impact the ability to produce a grass fed products at an efficient and a cheap price.

Ranchers have learned through this project that they need to be more concerned about the actual eating quality of the product. The yellow fact that comes from green grass in forages had one producer receiving ten to twenty cents per pound less, because the consumer is unaware the yellow fat is vitamin A or beta carotene storage. Most consumers have been conditioned in the United States to consume white fat that occurs with grain feeding. The additional time required to fatten grass fed cattle may result in a tenderness problem. Consumer instructions on how to properly prepare lean beef may need to be an important component of the advertising campaign and the education of the consumers. Ranchers need to test the impacts of their production systems on the quality of product produced. This could be done through one of the three University(Chico, Davis, & Fresno) facilities located in California.

Thinking Through Grass-Fed Beef

Report on Research Grant
University of California Sustainable Ag Research and Education Program
Natural Beef: Consumer Acceptability, Market Development and Economics

By
Glenn Nader, U.C. Livestock and Natural Resource Farm Advisor

Steve Blank, U.C. Cooperative Extension Economist

Marketing Beef in the Future

Thinking back over the years, many ranchers can remember the days when cattle buyers came to the ranch or bought at auctions. Gradually, feeder sales became the most common marketing method. Now cattle can be marketed through videos. The cattle industry of the future may follow the chicken producers lead of vertical consolidation--the close association of chicken ranchers to processors has become a contracted relationship of production. In the beef industry, new changes include the appearances of alliances, branded beef, and marketing cooperatives as new methods of selling animals. As marketing changes, it will be important to evaluate ways to capture a larger portion of the consumer's dollars. Grass-fed beef could offer ranchers another avenue of marketing. The intent of this document is to let you explore this option with enough information to be able to evaluate whether it could work in your operation.

The Dynamics of Marketing Direct to the Consumer

The retail farm price spread is illustrated in the 1997 average price per hundred weight published by the USDA National Agricultural Statistics Service.

	$/lb.
5 Market Steer (Live)	66
All Fresh Retail	253

The farm price makes up only 26 percent of the retail, but this price spread includes the weight loss in processing (live to carcass = 40 percent; carcass to retail loses 25 percent of the remaining 60 percent) and the additional costs to process the product (labor, packaging, transportation, interest, advertisements, etc.). The major beef packers have economy of scale (or size) to decrease their costs per unit. When marketing direct you must determine how much additional premium that you can receive for your product, since your competition has size (efficiency) on their side.

Niche marketing of beef is one way of diversifying your income stream, while staying in the same area of production. Marketing direct through vertical integration may not increase the overall profitability of the ranch, but may decrease the volatility of the market. Retail prices for beef have been more stable than live prices for feeder cattle. Thus, entering this portion of the market may provide an excellent return on investment during low feeder calf years and a poor return on investment when feeder cattle are high. The major problem of niche marketing is that the amount of energy and time it takes to develop a market will not allow you to move in and out of this marketing system. The initial efforts of a start-up will require you to have a long-term approach. The one exception is the marketing concept used by Case Study #2 (in this publication), where they marketed the animals through a wholesaler, thus allowing the wholesaler to develop the market and maintain constant supplies, and the rancher to just market when the product is ready, not when the demand is there.

Marketing beef through grass-fed systems should be considered only a portion of the operation. It is recommended that you consider transferring only a portion of your operation's marketing into this system so you learn its ups and downs with only a small percentage of your income at risk. Ranchers are excellent raisers of beef, but are generally not schooled in the marketing of retail or wholesale products. It will take some time to develop these skills and may be costly. The learning period can be improved by planning ahead and writing a business plan. When beginning, it is best to consider diversifying only a portion of your production into this marketing system; increase the number of animals in the system as you develop the retail skills and market sources.

The flow chart on the next page will help you visualize the issues involved in considering different marketing strategies.

Market Assessment

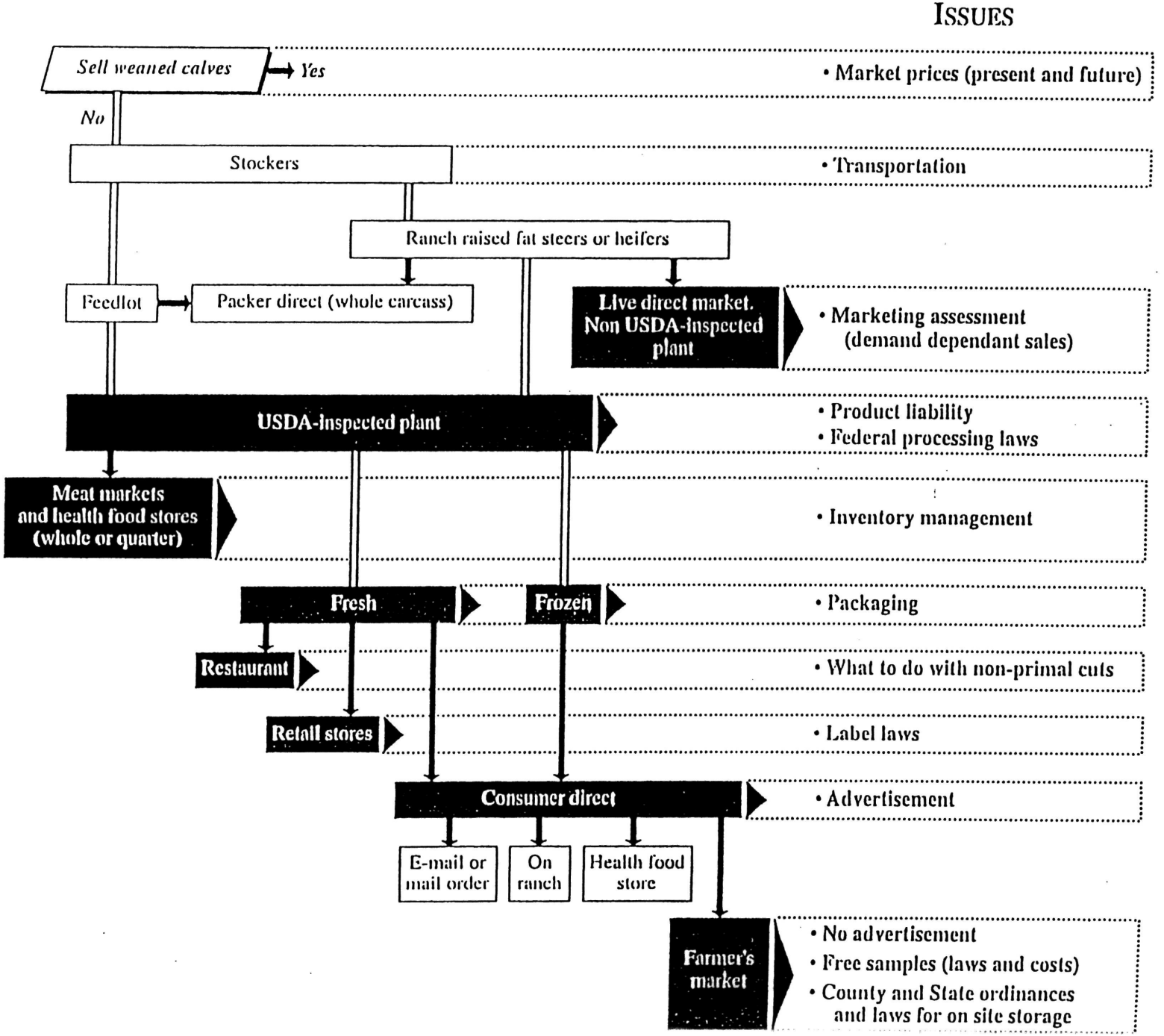
An important component of moving into new markets is a marketing plan. What is needed to make the transition, where is the market, and how much are consumers willing to pay? Matching consumer demands with your skills and interest, location, and operation size may determine where you go on the marketing flow chart (page 3). Proximity to a USDA-inspected processing plant seems the most sensitive financial cost factor, followed by the location of the targeted (high income) consumers.

Different Markets

1) Live Animal Sales and Processing

To sell meat to consumers it must be processed at a USDA-inspected plant. If your operation is not close to a USDA-inspected plant, your marketing options may be limited to direct live sales. For more information about live animal sales contact;

BEEF MARKETING FLOWCHART



California Dept. of Food & Agriculture - Meat & Poultry
Dr. Douglas Heper - Staff Veterinarian
1220 N St, Room A-126
Sacramento, Ca. 95814
(916) 654-0504 - phone
(916) 654-2608 - fax

A producer cannot:

1) Slaughter an animal and then sell it to an individual
2) Sell a live animal and then slaughter it for an individual
3) Sell a live animal and allow the individual to slaughter it on the ranch

A producer can:

1) Sell a live animal and have it leave the ranch live. After it leaves, you are not liable for the slaughter method/technique.

2) Sell live animals and build a CDFA-licensed custom slaughterhouse or direct the buyer to a CDFA-licensed custom slaughterhouse that can do the processing for the purchaser. Construction of such a facility can require a significant investment. Contact CDFA for more information on design and estimated costs.

This is a list of commonly known USDA-inspected plants that process beef cattle in California. A complete list of USDA-inspected meat plants listed by location is in Appendix 1. This list also could provide you with a list of wholesale processors that you could sell products to.

Johansen's	Orland
Alpine	Stockton
Shamrock	Los Angeles
Rancho	Petaluma
Harris	Coalinga
Redwood	Meats Arcadia
Qualos	Hanford
Los Banos Abattoir	Los Banos
Meridian Meats	Meridian

Educational
CSU Chico
CSU Fresno
UC Davis

Hazard Analysis and Critical Control Points (HACCP)

In July 1996, the Food Safety and Inspection Service (FSIS) announced implementation of new rules for improving the safety of meat and poultry. A major component of the final rule is the Pathogen Reduction/Hazard Analysis and Critical Control Points (HACCP) system, a science-based strategy for protecting public health. HACCP is being phased-in based on establishment size in three increments: large plants on January 26, 1998; small plants on January 25, 1999; and very small plants on January 25, 2000. Because small-sized plants may have limited resources in time, money, and manpower, FSIS plans an array of activities that will assist with HACCP implementation. FSIS developed 13 generic HACCP models to facilitate preparation of mandated HACCP plans. The models are designed to help small and very small meat and poultry establishments reduce costs associated with developing HACCP plans. To obtain copies of the generic models by internet **http://ifse.tamu.edu/alliance/haccpmodels/guidebook.**

Many of these small processing plants are uncertain about their future due to the implementation of the Pathogen Reduction/HACCP. Before making long-term marketing plans, you may want to discuss the implications of this act with the potential processor.

2) Packer Direct

Case studies have shown that grass fat beef, at certain times of the year, have meat with yellow fat. Discounts on carcasses of up to 20 cents per pound can occur due to the public's conditioned preference to the white fat produced from grain feeds that are lower in beta carotene (Vitamin A). Field experience indicates that it takes 45 to 60 days on non-green feed to reduce the yellow fat color. Case Study #4 (in this publication) was able to produce acceptable carcasses on dry annual grass in the summer.

The positive aspects of this market are that many of the other issues of grass-fed beef, such as inventory management, packaging, advertising, etc. are avoided.

3) Meat Lockers

Marketing USDA-inspected meat through this focused outlet reduces or eliminates packaging and advertisement costs. Case Study #2 sold whole carcasses to consumers who had them cut and wrapped by the meat locker. Processing of the product by purchasers adds time before payment is received--aging, cutting, wrapping, pick-up time may add four weeks. The other option is to sell carcasses direct to the locker and allow them to market your product. Health food stores are also a potential outlet for the same kind of marketing arrangement.

4) Retail Facility

The challenge of this avenue of marketing is to maintain a constant supply or be able to react to swings in demand. Being able to market the complete product line of hamburger, steaks and roasts is a minimal challenge, as long as the retail source is not solely interested in primal cuts. The ranch-to-consumer relationship is still strongly needed. For most, this marketing system and efforts to work with the retailer to promote the positive image of the rancher's relationship with the animals they raise will also be important.

5) Restaurants or Meat Purveyors

This group will be most interested in quality. The eating experience must be favorable to get repeat customers. Quality assurance will be their utmost concern. They also have a highly variable demand for product that may require you to either carry inventory or have a method of quickly moving products from live to usable form. This market area will also be interested in prime cuts as the majority of their purchase, making it necessary to develop other marketing avenues to sell hamburger and roasts. Some restaurants with buffets are interested in roasts for what they term "steamship"—roasts that they can carve on demand for customers. Some restaurants have even gone as far as to develop an informational packet on where their products come from to build rapport with customers and set the restaurant apart from other dining experiences. This area of marketing may provide the greatest return on investment for primal cuts, but is generally smaller in size and requires more work per unit of sales.

6) Consumer Direct

This market could evolve, through an entrepreneurial combination of E-mail, newspaper, mail order, ranch direct sales, and farmers markets. It requires going through a USDA-approved processing facility. This option would allow you to market your animals to match the demand to the time when they may be ready, and may decrease the amount of inventory management required to market animals on a retail basis. These outlets accept the frozen beef product. Freezing has been observed to decrease the yellow fat color. Product education is an active part of this market, both in describing the product (such as yellow fat) and recipes or ideas of how to prepare lean meat. The Cattlemen' Association or California Beef Council (510) 484-2686 or bb@calbeef.org are good sources for this information. One case study describes a ranch that offers tours and lunches of their grass-fed beef. For more insight on farmers' markets refer to Case Study #1 in this article.

Issues

Inventory Management

Most ranches have had a short calving and marketing time period to improve efficiency of the operation. That system also provided for marketing a uniform group of animals. Changing from live-to meat-product marketing could change your production focus. This will depend on the targeted market and if it will buy fresh or frozen. Matching the production quality to meet the variable consumer demand can be a challenge. The larger the scope of your operation and the more outlets you have will improve inventory management. Restaurant markets provide the largest challenge for inventory management as they may have variation in demand on specific cuts of meat. Consumers direct could allow you to focus on seasonal production. Freezing beef increases the ability to manage inventory, but increases the cost due to the cost of storage.

Table 1. Approximate yields of cuts from beef quarters (300-lb. side yield grade 3)

	Lbs.	%
Hind Quarter (144 lbs.)		
Round Steak	27.0	18.8
Rump Roast (boneless)	9.9	6.9
Porterhouse, T-bone and club Steaks	15.3	10.6
Sirloin Steak	24.9	17.3
Flank Steak	1.5	1.0
Lean trim	21.0	14.6
Kidneys	.9	.6
Waste (fat, bone, & shrinkage)	43.5	30.2
Total Hind quarter	144	100
Front Quarter (156 lbs.)		
Rib Roast	18.3	11.7
Blade Chuck Roast	26.7	17.1
Arm Chuck Roast (boneless)	17.4	11.2
Brisket (boneless)	6.3	4.0
Lean trim	49.2	31.6
Waste (fat, bone, & shrinkage)	38.1	24.4
	156	100

*Calif Beef Council "How to Buy Beef for Your Freezer"

Note that 46.2 % of your product is lean trim.

Product Liability

With the increase in concern over food safety, the rancher always has a small amount of product liability risk to deal with. Movement beyond raising the live animal increases the risk, as you add the responsibility of meat handling. One of the case study ranches described at the end of this article was asked to provide proof of $2 million dollars of product liability insurance to be able to sell at a farmers' market. It would be prudent to discuss this business consideration with your insurance carrier to see if the ranch umbrella liability insurance coverage is sufficient or if additional coverage is required. The closer you get to the consumer direct marketing, the higher the liability risk.

Label Laws

There are specific laws regarding product labels that will require state and federal review prior to their use in advertising. If you are going to market through a local farmers' market, you may want to coordinate with your health department and make sure that they are in agreement with state laws and regulations that govern the sales of beef products in such events.

To label a beef product as being unique or superior, a producer must first contact the Labeling Review Branch of the USDA to make an "Animal Production Claim" for labeling the product. The producer will then be required to submit a label application, a prepared (manufactured) label with the feature wishing to be claimed, and an Operational Protocol (OP) The OP is extremely important because it is this document that determines whether a producer can make the desired claim. An OP must be in the producer's own words and must include in detail how the animals are raised and cared for. An OP must include ration formulations, sick animal protocol and herd health management. It is difficult to list all things that must be included in an OP because each is based on the individual producer and the claim wishing to be made. Therefore, the Labeling Review Branch (LRB) stresses the need for a producer to get in contact with their office.

Contacts

Labeling Review Branch, USDA
Kathy Leety
(202) 418-8934
www.usda.gov/agency/fsis/lablterm

Once the application is completed, the label and the OP are sent to LRB it varies how long it will take to get the label approved. If the label is sent through the US Postal service, the process will be longer. If an express service or services specifically designed for label deliveries is used, the process will be expedited. In addition, the length of the process will be determined by how exact and specific the OP is and whether there are any questions about the raising/management techniques. A problem can mean many phone calls between the producer and the LRB, or the need for a rewritten OP. LRB emphasizes the importance of the wording in the OP. The time estimate for approval is at best one week with the use of the express services and an outstanding OP; in a worst case, it may be many months. LRB does not charge a fee to review label applications so the only cost is the actual processing fee, manufacturing the label and the cost of sending the materials to the LRB.

The following is a list of the most commonly used label terms; more information is available on the USDA Food Safety and Inspection Service web site (www.usda.gov/agency/fsis/lablterm):

CERTIFIED:

The term "certified" implies that the USDA's Food Safety and Inspection Service and the Agriculture Marketing Service has officially evaluated a meat product for class, grade, or other quality characteristics (e.g., "Certified Angus Beef"). When used under other circumstances, the term must be closely associated with the name of the organization responsible for the "certification" process, e.g., "XYZ Company's Certified Beef."

CHEMICAL FREE:

The term is not allowed to be used on a label.

NATURAL:
A product containing no artificial ingredient or added color which is only minimally processed (process which does not fundamentally alter the raw product) may be labeled natural. The label must explain the use of the term natural (such as - no added colorings or artificial ingredients; minimally processed.)

NO HORMONES (beef):
The term "no hormones" may be approved for use on the label of beef products if sufficient documentation is provided to the Agency by the producer showing no hormones have been used in raising the animals.

NO ANTIBIOTICS (red meat and poultry):
The terms "no antibiotics added" may be used on labels for meat or poultry products if sufficient documentation is provided by the producer to the Agency demonstrating that the animals were raised without antibiotics.

OVEN PREPARED:
The product is fully cooked and ready to eat.

OVEN READY:
The product is ready to cook.

ORGANIC:
The word "organic" is not allowed to be used on a meat or poultry label. USDA is developing proposed regulatory standards for the production of agricultural commodities, including raising organic livestock and poultry. The proposal must be finalized before the products can be labeled "organic." There is currently tremendous disagreement by the producers over the proposed regulations; if you are interested in a possible "organic" label on your beef, it would be wise to check with the USDA at the time you are preparing your ranch plan. (see its web site: www.ams.gov/tmd/organic)

Organic Certification

Contacts

National Organic Program, USDA
Ted Rogers
(202)205-7804
www.ams.usda.gov/tmd/organic

According to California Department of Agriculture and USDA, meat products cannot be labeled as organic until USDA has developed rules and regulations. A bill to create organic standards was first introduced in 1989. That bill, the Organic Foods Production Act (OFPA), was passed in 1990 as part of the Food, Agriculture, Conservation, and Trade Act. The OFPA mandated the Secretary of Agriculture to establish an organic certification program for producers and handlers

of agricultural products who use organic methods. The responsibility for developing the National Organic Program was assigned to USDA's Agricultural Marketing Service (AMS).

Production and marketing of agricultural products identified as "organic " began nearly four decades ago. As consumer demand steadily increased for organic products, production also increased. The market value of organic agricultural products, which include processed manufactured foods, was estimated to be $3.5 billion for 1996. However, there was considerable variation in practices, attitudes, and philosophies of those involved in the organic movement. Because of these differences, organic producers recognized the need for uniform standards. There are currently 33 private certification agencies and 11 states that provide organic certification. The organic industry turned to Congress for assistance in developing national standards.

How the Program Will Operate

AMS will accredit state and private organizations or persons to become "certifying agents." Certifying agents will certify that production and handling practice's meet the national standards. AMS will provide oversight to ensure that the purposes of the OFPA are accomplished.

A state may establish its own organic program for the production, handling, and certification of organic products. Any state program may contain more restrictive requirements than the national program.

Contacts

California Certified Organic Farmers
1115 Mission Street
Santa Cruz, CA 95060
(408)423-2263
web site: www.ccof.org

In addition, California Certified Organic Farmers (CCOF) has requirements to certify livestock products as "organic." Any beef cattle grower considering an "organic" niche, should contact CCOF before prceeding with a business plan. CCOF livestock production requires organically grown feeds, the active prevention of disease through nutrition and positive management of living conditions, and the humane treatment of all animals. Producers must complete an organic farm plan that is reviewed annually. Standards are subject to change according to federal and international accreditation standards. There is a certification handbook that has specific management requirements for certification.

The application process begins by contacting the CCOF Statewide Office and requesting an application for a certification packet, which includes:

Certification Handbook
Application Form
Farm Plan
Handling Plan
Instructions

When the application is returned, all portions pertinent to the operation must be completed, the Certification Supporting Affidavit must be completed and signed, proof of insurance must also be sent, and required application fees and dues (application fee: $175; additional processing fees are variable; annual fees and dues vary from $15 to $150).

Once the application is received, the Statewide Office generates an individualized inspection form and it is sent to the appropriate chapter. The chapter assigns an inspector and an initial inspection must be performed within 90 days from the date the forms were generated and 30 days from the assignment date. The chapter has 90 days to review the inspection report and assign status. The chapter forwards all copies of the Certification Status Report to the Statewide Certification Coordinator who reviews the file and sends out an official written notice of status.

Retail Law at Farmers' Markets and Sample Distribution

A producer must contact the Environmental Health Office (EHO), Department of Public Health Service in any county in which they want to participate in the farmer's market, or provide cooked samples to the public. In Yolo County, for example, the products sold at farmers' market must come from an approved source, meaning a USDA-certified/inspected slaughtering facility or processing facility. The products must be prepackaged and have a USDA label.

If you are interested in handing out cooked samples, you must apply for a permit. To receive a permit, the food must be prepared in a certified location (i.e.. an inspected restaurant), and served from a netted booth to keep flies, bugs, etc. off the samples. The guidelines are more stringent for preparation and distribution of the samples than for selling frozen products alone at a farmers' market.

Each producer must get in touch with the EHO of the county and abide by his or her requirements.

Packaging

Most restauranteurs are interested in a fresh product; packaging will not be as important as the quality of the product. Retail and individual sales will require packaging, in accordance with state food laws. Good packaging also enhances sales. Vacuum packaging provides superior product protection to hand wrapped. Label design and presentation will be an important part of your marketing. The cost of a professional artist to create a label can be expensive, especially when starting with a small volume.

Packaging Tip:
Many research studies have shown feeding animals high levels of Vitamin E the last two weeks increases the shelf life of meat products.

Marketing Plan

Identifying Your Market

Clearly, you need to identify the demographics of your purchaser, either directly or through your retail vendor. Market size, share and amount of money they are willing to pay for the product will be important to determine whether this will be a profitable venture. Advertising and sales do not have a linear relationship. Results from advertising are delayed and cumulative (stop ads and sale continue). It is important to identify what the consumer interest and product concerns are. The use of this information, either developed through focus groups or consumer surveys, will greatly help in the connection with potential purchasers of your product. Advertising takes a constant injection of cash to remind the public of your product. Cessation of advertising, after a large initial push, may greatly decrease the number of sales encountered.

It is important to know that the following five advertisement sources have different economic implications:
TV
Radio
Newspaper
E-mail
Farmers' Markets

Evaluation of the Product

Once you move from selling a live animal to a product, you must manage its quality and appearance. Understanding the impact your feeding and breeding system has on the product is important. The dressing percent and retail yield needs to be evaluated to fully understand the economic implication of this business venture. Consider testing your product with a community slaughter house or one on a university campus (in California: UC Davis, CSU Chico, CSU Fresno). Yellow-colored fat that comes from green grass-fed systems needs to be addressed by educating the consumers or by changing the feeding system. The tenderness of the meat can be evaluated by taste testing and shear force experiments (see Case Studies 3 & 4). Since hamburger will make up almost 50 percent of your product, consider the percent fat that you want to market in it. Some fat will be required for flavor and to bind the meat together during the cooking process.

Case Study #1
Grass-Fed Beef

We manage the ranch by ourselves and run about 300 head of cows that calve starting in February, and we take on about 200 head stockers in the fall and run them through until mid-summer when they go into the feedlot. We keep our own replacement heifers on the ranch as well. Our commute to town (Eureka or Arcata) is about an hour and 15 minutes. We like to minimize trips to town and manage to keep busy enough on the ranch. When we started our Ranch Meats, we did not intend to create another full-time job; we just wanted something to supplement our income in a down cattle market. We believed we could bypass that funnel effect of many producers to a few meat packing plants back to many consumers.

In Spring of 1995, we decided to harvest (the term that I use at Farmers' Markets, so we don't have to refer to slaughtering) our open two-year-old heifers. At that time, we pregnancy-tested our heifers in June and sold the open heifers when they would be at their heaviest and in their best condition. In our first year we sent out 50 or so fliers advertising halves and quarters to a number of individuals we thought would be interested in our product. We sold a half of one animal. But the verbal response we received was very enthusiastic about the kind of grass finished product we were trying to sell. At the time, we felt that our stumbling block to increased sales was that a half or quarter of a beef was both too much meat and too much money for an individual or family to deal with at one time. We also gave away another half beef to friends in about 40 pound boxes with a survey about whether they liked the product and how the quantity was. Also during that summer I sat with our meat cutters when they were cutting up that half of a beef and figured out what cuts we wanted, how thick they should be cut and how many packages of each cut I would have.

In February of 1996 we met with a friend of ours who is a graphic artist and another woman who was starting a product-marketing business. From that meeting we started developing our logo and brochure. The marketing woman was absolutely clueless about some of the challenges we faced, such as marketing a seasonal product and the fact that a beef animal does not yield all steaks. She felt her services were worth $500/month. We did not hire her. She claimed that Costco had the best ground beef she had ever eaten and did not think that ours would be able to compare. I gave her several sample packages. She loved it and later purchased some ground beef.

Throughout the spring we worked with our graphic artist on the brochure. Our goal from the outset was to sell all of the meat prior to slaughter for the obvious reasons that we did not want to sit on the frozen product and we did not want the intensive labor involved in moving the product. We wanted to hit a niche market of individuals who were willing to pay top dollar for a specialty, quality product such as ours. The brochure needed to be very professional, etc. Since neither my husband nor I am very artistic we felt we needed professional help. We believed that when we completed the brochure we would send them out to a selective group of people who had the ability to spend a little more of their dollars on our Ranch Grass Finished Beef. While we were developing the brochure we were also figuring out how many packages and which cuts would go into each box and how best to utilize the whole carcass.

It was a challenge to look into the future and predict how much of each cut an animal was going to yield and how to put that together in a box that would sell. In the end, we developed three different boxes with the thought that they could all fit in the top of someone's freezer. The different boxes were pretty much divided into the top end Steak Box, the middle end of various cuts, and the basic ground beef, stir fry box. Since I don't cook a lot of stews or pot roasts, I made the mistake of thinking my customers wouldn't either. This year we are carrying more stew meat and chuck roasts. One of our other goals was to make it seem easy, thus the stir fry. I included with each box some hints and a number of recipes; the professional look again cut into our profits. We also felt that mail order was another way to market our beef. Mail order is expensive and challenging. Since we are dealing with a perishable product, we needed cold chests, dry ice and second day air. Figuring it out so that we could set a price on it for the brochure was difficult. Setting a price in general for the different boxes prior to having product was challenging since everything we figured was based on ½ of 1 animal that I had cut up 8 months before.

Our next challenge was deciding how we wanted our product to look when we delivered it to these customers who were now expecting this great beef. We realized that the label was important and although the gentlemen who owned that the wholesale meat plant were more than glad to use their USDA label on the meat, it would then carry their name not ours. We decided we wanted our own USDA label. We worked with our local meat inspector. I wanted to have the label state that the meat was grass finished, but in order to do that he would have had to inspect the live animals weekly if not daily. Not a reality! We settled for a simple label that just said our ranch name and added "Meats" and has the USDA number of the plant we use. So then we were just down to developing meat labels, shipping labels, shipping chests and local delivery boxes. It took quite a while to work out something that did not cost an arm and a leg, but at the same time had the look that we were trying to create. We are still modifying that part of it.

Finally, our brochures were completed and ready to be mailed. We mailed them to our selective group of people and sat back and waited for the new phone to ring. Did I mention the need for a second phone line and answering machine? Somehow having a seven- year old answer the phone was not a part of my vision of a professional image. Not a whole lot happened. Our goal of having all the meat sold prior to slaughter did not happen. We moved on to our second consultant and new ideas. One of the ideas we came up with was the idea of Farmers' Markets. I contacted our local Farmers' Market and set up a card table at the market and started handing out brochures. Again, not a whole lot happened, people really wanted to try the product. I decided that giving out samples was fairly easy to do. I had done a lot of that sort of thing over the years for our local CattleWomen's unit. It was at this stage that I encountered our local Environmental Health Department. This is the agency that oversees the Retail Food Facilities Law which is the health code that governs the safety of products being sold at Farmers' Markets. Our discussion was so bad that our second meeting with them was arranged by our attorney. Their entire department turned out at the meeting with secretaries to take notes. In the end, we conceded the issue of giving out samples because we wanted them to let us sell frozen product at the market, which they did. I got everything together that I thought they had requested of us. I called to let them know I was ready for market and found out that they had decided that I needed some sort of mechanized refrigeration. I borrowed an ice cream cart from a fellow who couldn't wait to support me in my endeavor of challenging the Environmental Health Department. The first market I attended the Environmental Health Department made a check of the

market, the only one of the season. Unfortunately, several people were cited for different infractions, I was not one.

My trips to town were now two days a week to the Farmers' Markets, pulling a trailer with the ice cream cart. I could not fit in the designated parking, because I was too long so I would hoist my cart off the trailer and take it to my place. The biggest market I did was at the plaza in Arcata which is the home to many individuals who have some radically different political and social beliefs than most of us in agriculture. Our sales increased immediately, I even had repeat customers and our reception was very warm. But I was selling just individual packages, only occasionally the boxes. Soon I started to notice that my daily sales did not even come close to the larger farmer's and some of the specialty grower's. Since I was in town anyway I decided to hit up some restaurant's which lead to some great stories about what they wanted and what I could realistically provide them with. The only item that I had enough quantity of was the ground beef. Unfortunately, we need too much money for our ground beef for any restaurant to be interested in it.

Because we did not move all the meat as we initially intended storage now became an issue. I had literally a wall of meat at the Meat Plant. The gentlemen who own the plant were very generous with their space as well as knowledge and encouragement. I have provided them with great entertainment, but we did make sure at the end of the season that we tipped them very well - important but another unexpected dip into our profits. At the end of the Farmers' Market Season I had pretty well moved most of my meat (into locker's at least). A grand total of 6 head!!!

By the end of the year I was burnt out. As we started 1997 we took a critical look at how we did in 1996. As we started to look in depth at our budget v. actual costs and income there appeared to be a large hole in real v. anticipated income. As we examined it further we discovered that the problem area seemed to be control of inventory. We gave away a tremendous amount of meat which I did not track carefully. I also was not very good about tracking inventory as I sold it at the market - I was just relieved to see the mountain diminish.

In January, my husband and I attended the Fancy Food Show in San Francisco. We got inspired by all the great packaging ideas and by the fact that there was only one Beef Company there, B3R. I tracked down the woman who started the company and got a very unpleasant and negative response from her. By spring of 1997, we revamped the brochure and boosted our prices. I contacted Farmers' Markets in Santa Rosa and Davis. They both would have loved to have had us, but again I had to meet the criteria of their Environmental Health Department and how the officers in those areas interpreted the Retail Food Facilities Law. I also knew that the ice cream cart had some real limitations both with regard to the capacity it carried and the fact that if I traveled that far it would need some sort of power source to maintain the temperature. I also discovered that now I was going to have to get product liability insurance for at least one of the markets. Santa Rosa was the closest, but was a good four and a half hours from Eureka. We decided against pursuing it much further because we were beginning to look at a capital investment of a freezer truck or trailer. Since we had lost money the year before I was not too intrigued with the idea of working harder and more than I do for real work (on the ranch) which at least I get to do on horseback.

This year we sent out brochures to all of our customers from 1996. We also had been highlighted on the California Heartland program and got a great response from a number of viewers. We sent out brochures to about 200 people who had already either expressed an interest in our product or who were so pleased with it that they had let us know that they would definitely purchase this year. Our response was maybe ten percent. I did not follow up with phone calls which probably would have helped, but it is not in my comfort zone to do that sort of thing. We slaughtered three head. As time for the Farmers' Market approached I found that I was busy with other things - furthermore the cattle market has gone up. Bottom line is I just never made it to the market. I still have some inventory from the three head to move. My family is glad I was home more this summer. Cattle work was much easier with my husband not bearing the brunt of the load. I don't think that we have given up on the idea, but it needs to be larger than just me marketing it, and honestly, neither my husband nor I am willing to go that far out on a limb with it. We are currently taking the approach that it needs to stand on its own and we will see what happens by word of mouth over the next several years.

Case Study #1- GRASS FINISHED ANALYSIS THRU 4/21/97

		Total		Per Animal
Meat SALES:				
Sales 1996		3,918.02		653.00
Sales 1997		371.85		61.96
plus				
CLOSING INVENTORY				
Pounds of Meat		500.00	ESTIMATE	83.33
=		---		---
GROSS INCOME		4,789.87		798.31
OPENING INVENTORY				
plus				
PURCHASE	6 Hd.	2,676.00		446.00
=				
COST OF SALES		2,676.00		446.00
		---		---
GROSS PRODUCT (gross inc. - cost of sales)		2,113.87		- 352.31
less				
DIRECT COSTS:				
Cattle				
vet		69.30		11.55
sales				
interest		391.60		65.27
slaughter		192.45		32.08
Meat:				
Cut & Wrap		1,203.30		200.55
Storage		147.00		24.50
Packaging/shipping		148.93		24.82
Sales (credit)		86.81		14.47
		---		---
TOTAL D.C.		2,239.39		373.23
GROSS MARGIN (gross pro.- D.C.)				
G.M./Hd. 6		-125.52		-20.92
		OVERHEAD COSTS OF GRASS FINISHED		
Professional Serv		2,103.08		350.51
Printing		1,034.51		172.42
Permits		75.00		12.50
Farmer=s Market		241.00		40.17
Promo.		310.24		51.71
Ted & Barney		400.00		66.66
		---		---
TOTAL OVERHEADS		4,387.85		731.31
		-125.52		-20.92
G.M. ÷ OVERHEADS		-4,513.37		- 752.23

CASE STUDY #2
Grass-Fed Beef

RANCH PHILOSOPHY or WHY WE SELL GRASS FEED BEEF

Our decision to market our ranch raised "natural" beef was born originally from a desire to promote local participation in agricultural commodities, specifically beef. If anything, it was never started as a way to replace traditional marketing strategies used by this ranch.

For years, this ranch has sold cattle that did not fit the traditional feeder calf market directly to consumers or on the rail to a packing plant. As the beef market tightened, the need for more flexible marketing strategies arose. Cattle that were not shipped due to weight, size, heiferettes, etc., left this ranch with cattle which needed to be sold.

We have eaten a lot of our own grass fed beef. We believe in the environmental responsibility of beef produced this way, however, the window to produce high quality beef from grass is very short, generally only five months out of the year. To keep cattle available, we incorporate supplementation while leaving the cattle on grass. This produces the desirable hard finish that can only be obtained during those two months on grass alone.

Some of the most pressing issues that helped to form the idea of selling locally were:

- public perception of pharmaceuticals used in beef production
- public perception concerning stewardship of the land as well as the question of sustainability
- lack of availability of dry-aged beef
- a burning desire to work with conscientious consumers who are concerned about where their food comes from.

The downside of all this was industry criticism for daring to comply with consumer demands, ie: no use of hormones nor fed antibiotics. To us, the fact that these never were practices used by this ranch became a natural way to promote our product. Common sense dictates that it costs far more to convince a skeptical consumer to embrace the notion that implants and fed antibiotics are fine, than to provide them a product they are asking for, which is implant-and hormone-free.

With every pound of beef that we retail, we are selling our philosophy. We believe that the way we raise our cattle is something to brag about. Our animal genetics are chosen to do more than produce beef--they are chosen to work in harmony with environment, both the natural environment as well as the operational demands of our management needs.

We fly in the face of most recommended or accepted methods of management promoted by our industry and universities, making us a constant target of skepticism. Yet we have a program which works here. We calve year 'round so that we have a constant supply of beef available; we use genetics that compliment our diverse terrain; we mange for hardy cattle which do not require fly control, implants or excessive use of pharmaceuticals.

The Marketing Outlets Used

We have worked on two aspects of marketing natural beef:
1) marketing through a local meat locker
2) selling them on the carcass level through a packer

The concept of this marketing plan is to diversify the points of sale and to take animals that do not fit the traditional feeder calf market and sell them on a carcass basis. We also feel that during low fat cattle prices, if they use natural by-product feeds and grass, producers can economically feed animals and sell them as a wholesale and retail product.

Local Retail

When we sell truckload lots of cattle, there are always those that do not fit the size, weight or any other sales parameters required. It is these animals that we have used to supply the local retail meat lockers. We have been marketing through a local meat locker since 1987. The animals are processed through a USDA inspected facility, which is approximately 22 miles from the ranch, and then transferred by refrigerated truck to the meat locker, which is approximately 25 miles away from the processing facility. The meat locker picks up the carcasses with their refrigerated truck. We own the beef through the marketing chain and are paid on a per pound basis, post sale. We do not have the carcasses graded, but guarantee the eating quality. Carcasses are sold direct to the customer for $1.00 per pound. There are some hidden costs like the delayed payment for animals because of the time it takes for aging, processing, wrapping, and customer coming by to pick up the meat. It may take from 30 to 60 days after slaughter to receive payment from the customer.

Processor Direct Sales

We direct marketed grass-fed beef to Alpine Meats in Stockton. To meet the USDA grading standards, we had to feed by-products to finish these animals. The animals were sold as a carcass per pound basis; heavy discounting up to 10 to 15 cents occurred because of the yellow fat from the high beta carotene from alfalfa and grass in their diet. Due to the first lot of animals being discounted, the last 60 days of the ration were then changed on the second two lots and fewer animals were discounted for yellow fat. Alpine Meat was also concerned about the darker red colors in the first load of animals. This, too, was a perceived marketing problem that could be attributable to either diet or age of the animal. This portion of our operation is a function of the low feeder prices. We used this only during years of low feeder prices as a marketing alternative to increase our profits from the cattle operation.

The decision whether to feed cattle themselves and market them on the rail is based upon the time of potential sales, a profit analysis at the time of feeder cattle sales, and the development of alternative marketing strategies.

THE DECISION MATRIX

Recognizing that philosophy alone won't pay the bills, we have to carefully weigh our decisions to retail or consign carcasses. It is crucial to feed for at least a 250 pound gain. Because we guarantee our beef, we know that too high of a percentage can come back due to a less tender product. We have had better success by selling cows with a 250 pound gain, than by selling 100 percent grass fat, but that is another story in itself.

Our success relies on two critical components:

1) Cheap feed: we use almond hulls, rice bran and alfalfa cubes, but we have also used prunes, rye grass pellets, corn, bakery waste, tomato waste, barley, rice cakes, and cracked rice in the past.
2) Conversion: we are selling beef, not fat. Our genetic selection is based heavily upon good conversion rates.

Following is a simple equation for deciding whether to sell feeders or use marketing alternatives:

1997 FAT MARKET - $1.00 ON THE RAIL

LOOK AT COST OF GAIN ON 850 POUND FEEDER:

+250 Pounds of gain
1100 pounds

EXAMPLE:

675 LB. ON RAIL @ 1.00	$675	
TRANSPORTATION TO PROCESSOR	-55	
PROCESSOR CHARGE	-20	(varies)
@ .40/LB COST OF 250 LB GAIN	-100	
	500	

The breaking point is $ 58.80 for an 850 feeder to make it work. Anything more would mean selling as feeders. In 1996, we were offered $52.00 for our 850 feeders. Our grass cost of gain was 30 cents/lb. and the by-product ration was 50 cents/lb of gain. Our genetic base allows us to obtain cost-efficient gains. We were able to hit 60% choice grade with a minimal amount of external fat. Fat takes 2 1/4 times the energy to produce than protein and our higher protein gain is why we can feed efficiently.

GETTING READY TO SELL

We decided to forgo the bureaucratic road to label our beef, and therefore stayed with carcass sales only. The other route , to jump through the necessary hoops to legally sell our beef by the package--did not fit into our time constraints. While selling carcass beef limits the market, juggling pounds of less desirable cuts, freezer time, and coordinating too many variables such as retailers, customers, agencies, and restaurants would not leave enough time to manage our ranch operations.

Our first leap into the retail arena included advertising. We spent more than $12,000.00 on name recognition alone with local radio in the first year. We were not offering the cheapest beef in town. We offered the consumer a choice of types of beef such as lean, grass fed, or fatter, fed cattle. Choosing a radio station can be very tricky. For us, the radio brought desired name recognition, but not enough sales to justify the cost.

The work involved in radio can be staggering if you don't hire a consultant. We wrote our own ads and used our philosophy as the focus. They were "comfort" ads, which didn't scream price, but offered a part of the traditional past of raising and processing beef.

We now understand that before deciding on radio for advertising, one must study the market of the station to see if it fits the type of customers that are desired. We did not do a good job of that, and paid a hefty price for our ignorance. Because we are selling food, the type of advertising we do must be on a "consumer acceptable" level, which means that we don't take out "want ads" as an avenue for advertising.

Because we already had loyal customers through our local butcher shop, we decided to market our beef through them. To date, we find that newspaper advertising works well for us. That can cost from $400.00 up, depending on the size of the ad. We also invested in a professional graphics designer to help create the image we want to present to the public. Costs can vary widely; ours was $750.00.

Getting butchers to cooperate can be very tricky. Usually they have their own supply of beef that already works for them. Essentially, we represent a way for them to get more cutting and wrapping customers. This why it is imperative to market our beef based on our own philosophy, which does not necessarily coincide with the way retail shops conduct their own business. Essentially, consumer demand for our type of product has grown enough that retail shops understand its importance.

Ad design is critical to any advertising. We wanted to gain consumer confidence about our product by letting them know our beef is 100% unconditionally guaranteed, and locally raised. We started this venture when consumer confidence was at an all time low. Apocalyptic horror stories about beef were bombarding the media, making it extremely difficult to find acceptable ways to promote a product that was (and is) perceived as less healthy than chicken, and environmentally unfriendly to boot.

We will undoubtedly try radio again, however for now, print media is more cost effective. When we advertise, duration and size of the ads are determined by our inventory. It does no good to market what you don't have, or to make a customer wait.

One critical component of the retail business is to know what is under the hide. We would not be able to market locally if we produce low-yielding carcasses. We stay close to rail prices and add the cutting and wrapping charge on top. Our retail consumers would not stand still for "wastey " carcass. We continue to weigh the "yellow fat" issue which is merely beta carotene. Public perception comes to play again since yellow fat does not "look" as palatable as white.

One caveat that can kill any retail program is the locker itself. We cannot stress enough the importance of locker temperatures as well as content. It doesn't take much to spell disaster for the beef carcass. Failure or under-capacity (too many carcasses for the size) of a compressor; or too many game carcasses can render your product unusable.

Our plans for the future include contracts with Coleman Meats, brochures that tell our story, as well as dabbling on the Internet. What we have works as long as the feeder market is not extremely high. We keep our costs at a minimum by mixing our own feed and minerals.

COSTS & PAYMENT

Carcass	$1.00 per pound (rail price)
USDA processing	$20.00 per head
Cutting and Wrapping	35 - .44 per pound
Advertising	varies

Our customers pay the butcher for the beef. We bill the butcher for the cold rail weight at the rail price.

COMMENTS

Our retail marketing program was not born solely from a profit motive. Our expectations are that we will continue to develop a larger retail market as time and money permit. Retail is a tricky if not a fickle endeavor, and requires a great amount of dedication and patience. Paramount to us is to gain consumer confidence in eating beef, and to allow our community a chance to experience beef that has been properly aged, and does not taste like cardboard.

This type of endeavor is time consuming and produces many a headache when something in the chain does not follow through. It is much like the old Excedrin headache commercials where someone was being chewed out because someone else down the chain did not live up to a commitment. Raising and selling beef in the traditional manner is much easier on the heart, but the rewards of seeing your product through to a satisfied customer is well worth the effort to us.

It cannot be said enough that anytime we are interviewed about our beef, we received dozens of phone calls from people who DO NOT WANT ADDED HORMONES OR FED ANTIBIOTICS in their meat. We see no reason to tell them otherwise.

Direct Marketing Farm-Raised Beef

by Lisa Cone Reeves

A friend of mine says that if she had known what was involved in running her business before she started it, she never would have found the courage to begin. I have a faint sense that her observation applies to any business, and direct-marketing home-grown beef is no exception. However, I'm still blissfully ignorant on many points; therefore, I'm carrying on as though I know what I'm doing. Dave and I began marketing our grass-fed beef steers to the public under our own label in June, 1995.

Our intentions were relatively well-defined and lofty enough to keep us inspired: we wanted to offer the public the opportunity to eat the kind of beef we grew for ourselves. We knew enough about the mainstream beef industry to have made us vegetarians for three years while Dave was in school. When we moved back home to the ranch, we began implementing organic practices in our pasture management. We experimented one year with hormone implants in our steers and saw no difference in the two groups, so dismissed them as unnecessary and unwanted pharmaceuticals in the food supply. We observed that healthy happy calves don't get sick, so antibiotics are unnecessary in most instances; we believed that subtherapeutic doses of antibiotics in animal feeds contribute to bacterial resistance to antibiotic therapies, and are therefore immoral even if not illegal. We were repulsed by the confinement style of chicken growing that was mushrooming around Northwest Arkansas, and equally turned-off by tales of the feedyards out west. And finally, we gathered enough resolve to take full responsibility for the lives of our calves, from birth to death.

These may not be your reasons for considering direct-marketing as an option for your cattle. Whatever your reasons, your decision to begin direct marketing revolves around two basic points: your market and your product. The simplest marketing plan is to sell a whole or half beef to folks in your area, price it per pound live or on the rail, take your money, and let the customer instruct the processor and pay the processing costs. Our more involved marketing plan involved developing our own label, our own line of cuts, and our own continually evolving market, and I will discuss some of the first steps here.

The direct-marketing method you choose will depend on you: your goals for the business (Will you devote all your energy and spend barrels of money to make your product a household name, or can you only spare an afternoon every couple of weeks? Are you interested more in financial gain, or in personal satisfaction?) and your individual situation (Do you understand the people who make up the market you are targeting? Do you have an expert processor who will take the time to process and package your product the way you want it? Can you find a graphic designer for your brochure and ad layouts? Is there someone in your operation who enjoys solving puzzles?).

Decide the type of beef you will grow and the target market you feel comfortable with. For example, do you want to grow USDA Choice-grade grass-finished beef for gourmet and restaurant markets, or lean "natural" beef for the health- and fitness-conscious crowd? You will be identified with this product from now on. Your target market will depend on the product you produce, and vice versa. For example, our beef is very lean, and is quite tender when prepared with a delicate touch. If, however, someone buys our rib-eyes and grills them authoritatively, as though they were heavily marbled, the dinner guests will not be happy with the results--our luscious steaks will have become boot leather. Never mind that our cooking instructions were ignored--the blame will fall on the beef, not the chef. Conversely, someone who rarely eats red meat because of health or moral concerns may be grossed out by the sight of marbled beef, and be unwilling to eat it.

When you take the fateful step of developing your own label, you will have to learn the rules of the USDA game; they are not difficult. Some people resent having to play by these rules. I personally don't mind following established procedures to insure food safety, especially food that has my name on it, but if you do have a problem with authority you might be better off in another arena.

Our processor was instrumental in getting our label approved by the USDA Labeling Division. You'll have to design your label with your processor's cooperation, since the label must have their "bug" on it--the little seal that has their plant number--and it is required to have the standardized safe handling instructions, complete with icons. Our processor sent our draft label, which their regular label guy drew up using my logo and my basic design, to an expediter in Washington D.C. to push it through the USDA's approval process. (You can send it yourself to the USDA, but without an expediter hand-carrying it through the approval process it may take six months to come back.) As part of this process, you are required to write an affidavit describing your production practices (including in our case, our protocol in the event of illness in our cattle, since we make a label claim of using no antibiotics or medicated feeds) etc.etc. In essence, you must explain any and all label claims, have your signature notarized, and send the affidavit to the USDA Labeling Division for them to retain on file. There are lots of buzz words (like "natural", "lean", "organic") which have to be explained on the label and/or documented by testing or inspection. I had spoken with the woman who headed the labeling division two or three times by phone before our label arrived from the expediter, and although she didn't seem to suffer fools gladly, once she decided I was sincere she proved to be very helpful and informative. I have included her name and address at the end of this handout.

The most critical factor in your success may be your ability to utilize excellent people to help you, from your graphic artist to your printer to your truck driver, and *first and foremost* your processor. We searched actively for over three years before we located ours sixty miles away in another state. One way to find a good one might be to go to smaller locally owned groceries that offer good beef, and ask them where they get it: tell them you're looking for a skilled, USDA-inspected processor to package "gourmet" beef for niche marketing. Usually, if you hang out long enough they will open up and tell you whatever they can. Ask a bovine veterinarian in your area. Ask the sale barns.

The most crucial criteria for choosing our processor were:

1.) The plant must be USDA-inspected for interstate sales, which involves having a federal inspector on the kill floor as well as a federal inspector in the processing area. Dave and I conducted our own personal inspection of the premises, as well, and if there were any off-odors, the plant was off our list. Use judgment when you do this yourself--beef processing is a fragrant affair--but there should be no hint of spoiled or rotten smells.

2.) They must be equipped to vacuum-package your product. It is a rare consumer who will buy beef wrapped in butcher paper, sight unseen. Shelf-life is greatly increased with vacuum packaging, especially opaque packaging for ground beef due to a UV barrier as well as an O^2 barrier.

3.) They must be willing to listen to you. This is your product, and it must be cut according to your specifications. We choose the cuts we sell based on our personal experience in growing our own beef for the freezer: we took note of the cuts that were consistently tender, and those that were frequent disappointments. Everyone has their own favorite cuts. The owner of Calabash Natural Foods near Fort Smith, Arkansas on the Oklahoma border sells only his homegrown ground beef. David Schaeffer and Alice Dobbs near Kansas City sell only tenderloin medallions plus ground beef.

4.) Since we sell our beef as frozen product, it is critical that our product be frozen a.s.a.p. Our processor's freezer is -40° or thereabouts for the initial freezing, with the holding freezer at -20° to -10°.

5.) It's helpful if they can truck the beef to a local locker plant for longer-term cold storage, if necessary. There have been occasions when we take one or two head for processing and sell the beef as soon as it's packaged, but more often we take a dozen head or more within a short time span, and fetch the amount of beef we need for our deliveries from the cold storage facility at different times during the year. Your processor should know of cold storage facilities nearby that you can use for a reasonable per-pound rate.

Selling is the biggest test of my resolve. I remember the first calls I made to high-end groceries in Little Rock as being one of the hardest days of my life. These were not "cold" calls--I had called and spoken to the managers and written introductory letters to announce my arrival--but I still had to cheer feverishly to myself before I drove up to those very public doors. It is much easier now, in fact I almost enjoy it, but selling does not come naturally to me by any means. A good salesman told me recently that he believes strongly in everything he sells, and can convincingly assure the store that it *needs*, its customers *want*, what he has to offer.

I made some crushingly expensive mistakes in the beginning--the good thing about them, is that I won't ever have to make those mistakes again. Most of those errors in judgment involved advertising in the wrong places. Advertising is incredibly expensive, and not one of those glossy ads in the *Eureka Springs Dining Guide*, or the classifieds in *Bon Appetit*, or even the local paper's *Guide to Local Businesses* ever paid for itself. I also sent out a bulk-mailing, which was a total failure. Not one sale, out of many thousands of addresses, at a cost of a few thousand dollars.

I mailed press releases to every newspaper in Northwest Arkansas, as well as the Little Rock, Tulsa, and Springfield, Missouri papers. We had three reporters come to the farm, two from area papers who printed nice articles with photos, one who taped and broadcast a radio interview over the Fayetteville NPR station. We still didn't get many sales.

All this failure convinced me that you have to match your marketing to your product. We now target customers who have demonstrated that they are willing to pay more for higher quality food. We do this by marketing almost exclusively to health food stores, wholesale. We advertise to people who are looking for what we have to offer. The exception to this is the retail stores themselves: many health food stores have avoided meat products, especially red meats, as a matter of course; our mission is to convince them that there are people out there who will joyfully eat clean, "range"-grown beef, precisely *because* of the health benefits. We show them photos, and describe the ranch and the lives of our cattle. We point out the obvious--that beef is a very high-quality, nutrient-dense source of protein and obscure nutrients like B12, folic acid, and zinc, that is utterly delicious and deeply satisfying.

Many retail outlets can be prevailed upon to give freezer or other shelf space to local products, especially if you are willing to do in-store demonstrations and hand out samples, provided your beef sells fairly well. You will be able to tell after talking to a few managers whether your product and their store will be a good match, and if you feel it will not work out, it's best just to let that store struggle without you.

Some direct-marketers give slide presentations and pass out samples during luncheon meetings of civic clubs in their area. This is a fabulous way to get your product in front of the folks who can sell it for you by word of mouth. We don't do this type of marketing at present, because we live in the heart of cattle country and most people either have cattle themselves or their uncle does. But we may take it on the road to nearby cities someday.

Farmers' Markets in larger cities sometimes permit the sale of farm-raised animal products, and can be a great source of retail income. We are hopeful that the Fayetteville Farmers' Market, our area's largest farmers' market, will expand next season to include animal products such as goat cheese and our beef, in addition to fruits, vegetables, and crafts.

Some folks have a small retail building on their farm, where they sell their beef along with other local produce, honey, garlic braids, or crafts. Other producers form cooperatives, such as the Tall Grass Prairie Producers in Nebraska, and hire a professional to do their marketing for them. This eats up a big chunk of the profits, so you need a large volume to consider this as an alternative to doing it yourself.

There are as many ways to market as there are products to sell, and you will find the method that suits you best. We wish you great good luck, ask you to send us a brochure, and let us know how you're doing!

David and Lisa Cone Reeves
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The USDA Labeling Division authority mentioned in the article:
Kathleen Leddy, Food Technologist
Labeling Policy and Approval Branch
Food Labeling Division, Regulatory Programs
United States Department of Agriculture
Food Safety and Inspection Service
Washington, D.C. 20250

Did the Locker Plant Steal Some of My Meat?

by Duane M. Wulf, Ph.D., State Extension Specialist—Fresh Meat
The Ohio State University

To determine how much meat you should get from a market animal:
Pounds of Meat = (Dressing Percent X Carcass Cutting Yield) X Live Weight

Therefore, two factors affect the percentage of meat that you will receive:

1. Dressing Percentage
2. Carcass Cutting Yield

Dressing Percentage

Dressing Percentage = The percentage of the live animal that ends up as carcass.

Dressing Percentage = Carcass Weight/Live Weight X 100

Dressing Percentage is affected by:

1. Gut fill—The more gut fill at the time the live weight is taken, the lower the dressing percentage will be. If an animal is weighed right off of full feed, the dressing percentage will be 2 to 5% lower than if the animal is fasted for 24 hours prior to weighing.

2. Muscling—A heavier muscled animal will have a higher dressing percentage than a light muscled animal.

3. Fatness—A fatter animal will have a higher dressing percentage than a lean animal.

4. Mud—Cattle with a lot of mud attached to their hide will have a lower dressing percentage than clean cattle.

5. Wool—Lambs with long wool will have a lower dressing percentage than recently-shorn lambs.

Average Dressing Percentages:
Beef cattle: 62%
Dairy steers: 59%
Market hogs: 74%
Market lambs: 54% (shorn)

Carcass Cutting Yield

Carcass Cutting Yield = The percentage of the carcass that ends up as meat.

Carcass Cutting Yield = Pounds of Meat/Carcass Weight X 100

Carcass Cutting Yield is affected by:

1. Fatness—Leaner animals will have higher carcass cutting yields than fatter animals.

2. Muscling—More muscular animals will have higher carcass cutting yields than less muscular animals.

3. Bone-in versus Boneless—This will dramatically affect carcass cutting yield. If more boneless cuts that are made, then the carcass cutting yield will be lower than if bone-in cuts are made. If bone-in chuck roasts, rib steaks, T-bones, and bone-in sirloin steaks are made, the carcass cutting yield will be much higher than if boneless chuck roasts, ribeye steaks, strip steaks, and boneless sirloin steaks are made. It is important to note that the amount of edible meat will not change, but boneless cuts will take up less room in your freezer. If you get soup bones and short ribs, the carcass cutting yield will be higher than if you have these items boned and put into ground beef.

4. The Amount of Fat Remaining on the Meat Cuts—If the meat cutter leaves more surface fat on the meat cuts, then the carcass cutting yield will be higher than if the meat cuts are closely-trimmed.

5. The Leanness of the Ground Product—If the ground product (ground beef, ground pork, pork sausage, ground lamb) is made very lean, then the carcass cutting yield will be lower than if the ground product is made with more fat. For example, a typical beef carcass could have 20 more pounds of ground beef if it is made into 70% lean ground beef than if it is made into 92% lean ground beef.

Beef Examples:

Average beef animal, weighed full, 1200 lbs., boneless steaks and roasts, closely trimmed, lean ground beef: (.61 X .62) X 1200 = 38% X 1200 = 456 lbs. of meat.

Average beef animal, weighed full, 1200 lbs., bone-in steaks and roasts, regular trimmed, regular ground beef: (.61 X .71) X 1200 = 43% X 1200 = 516 lbs. of meat.

Average beef animal, weighed full, 1200 lbs., some bone-in and some boneless steaks and roasts, closely trimmed, regular ground beef: (.61 X .67) X 1200 = 41% X 1200 = 492 lbs. of meat.

Average Holstein steer, weighed full, 1200 lbs., boneless steaks and roasts, closely trimmed, lean ground beef: (.58 X .57) X 1200 = 33% X 1200 = 396 lbs. of meat.

Lean, heavily muscled beef animal, weighed full, 1200 lbs., boneless steaks and roasts, closely trimmed, lean ground beef: (.62 X .69) X 1200 = 43% X 1200 = 516 lbs. of meat.

Very fat beef animals, weighed full, 1200 lbs., boneless steaks and roasts, closely trimmed, lean ground beef: (.62 X .46) X 1200 = 29% X 1200 = 348 lbs. of meat.

Lean, heavily muscled beef animal, weighed empty, 1200 lbs., bone-in steaks and roasts, regular trimmed, regular ground beef: (.65 X .80) X 1200 = 52% X 1200 = 624 lbs. of meat.

Pork Examples:

Note: The dressing percentages and carcass cutting yields in these examples are for skin-on pork carcasses. Many meat plants skin pork carcasses. Skinned carcasses will have lower dressing percentages and higher carcass cutting yields. However, you will still come up with the same answer when calculating the amount of meat so these examples still apply. In other words, you will get the same amount of meat from a pig whether the carcass is skinned or not.

Average market hog, weighed full, 250 lbs., bone-in chops and roasts, closely trimmed, regular ground pork/sausage: (.72 X .74) X 250 = 53% x 250 = 133 lbs. of meat.

Average market hog, weighed full, 250 lbs., boneless chops and roasts, closely trimmed, lean ground pork/sausage: (.72 X .65) X 250 = 47% X 250 = 118 lbs. of meat.

Lean, heavily muscled market hog, weighed full, 250 lbs., boneless chops and roasts, closely trimmed, lean ground pork/sausage: (.73 X .73) X 250 = 53% X 250 = 133 lbs. of meat.

Very fat, light muscled market hog, weighed full, 250 lbs., boneless chops and roasts, closely trimmed, lean ground pork/sausage: (.74 X .50) X 250 = 37% X 250 = 93 lbs. of meat.

Heavily muscled market hog, weighed empty, 250 lbs., bone-in chops and roasts, regular trimmed, regular ground pork/sausage: (.76 X .82) X 250 = 62%X 250 = 155 lbs. of meat.

Lamb Examples:

Average market lamb, shorn, weighed full, 120 lbs., bone-in chops and roasts, closely trimmed, regular ground lamb: (.51 X .75) X 120 = 38% X 120 = 46 lbs. of meat.

Average market lamb, shorn, weighed empty, 120 lbs., bone-in chops and roasts, closely trimmed, regular ground lamb: (.54 X .75) X 120 = 41% X 120 = 49 lbs. of meat.

Average market lamb, shorn, weighed full, 120 lbs., some bone-in and some boneless chops and roasts, closely trimmed, regular ground lamb: (.51 X .68) X 120 = 35% X 120 = 42 lbs. of meat.

Lean, heavily muscled market lamb, shorn, weighed empty, 120 lbs., bone-in chops and roasts, closely trimmed, regular ground lamb: (.57 X .78) X 120 = 44% X 120 = 53 lbs. of meat.

Fat, light muscled market lamb, long fleece, weighed full, 120 lbs., bone-in chops and roasts, closely trimmed, regular ground lamb: (.48 X .65) X 120 = 31% X 120 = 37 lbs. of meat.

Canola Oil and CLA

Conjugated Linoleic Acids (CLA) refers to a class of isomers of linoleic acids which have been recognized as having antioxidative properties in animal model studies. They have also appeared to be anticarcinogenic, to stimulate immune response and to protect against arteriosclerosis. Milk and meat from ruminants contain more CLA than foods from non-ruminants. Z. Mir and her colleagues at Alberta Agriculture cooperated with a goat producer in northern Alberta to study the effect of supplemental canola oil in the diet on the CLA content of goats milk.

"Feeding canola oil at 2 and 4% increased CLA in the milk by 88 and 210% respectively, compared to the no canola oil treatment ($P<0.01$). Increasing the canola oil content to the 6% level did not further increase the CLA content of the milk."

(Though goats are a relatively small part of the grazing animal community, the very significant increase in CLA in goat's milk raises the possibility of increasing CLA content of meat and milk in other ruminant species R.G.)

Source: Z. Mir, L.A. Goonewardene, E. Okine and S. Jaegar, 1998. Effect of feeding canola oil on constituents, conjugated linoleic acid (CLA) and fatty acid profiles in goats' milk. Proceedings of the annual meeting of the Canadian Society of Animal Science, July 1998. ('98, P68) page 332.

BEEF PROGRAMS

Characteristic	Certified Angus Beef	Sterling Silver Excel Corp.	SYSCO Supreme Angus Beef	SYSCO Imperial Angus Beef	Farmland Angus Beef	Wal-Mart Angus Beef	Packerland Angus Beef [1]	Omaha Steaks Angus Beef	Excel Corp. Angus Pride	Farmland Certified Premium Beef
Live Requirements										
GLA-phenotype (51% black)	X		X	X	X	X	X	X	X	
GLA-genotype			X (Red Angus)	X (Red Angus)					X (Red Angus)	
Quality Factors										
U.S. Prime	X	X	X	X	X	X	X	X	X	X
U.S. Choice	X	X	X	X	X	X	X	X	X	X
U.S. Select										
Marbling requirements	Modest ^{00} or higher	Modest ^{00} or higher	Modest ^{00} or higher	Small ^{00} or higher	Small ^{50} or higher	Modest ^{00} or higher	Modest ^{00} or higher	Small ^{00} or higher	Small ^{50} or higher	Small ^{50} or higher
Medium or fine marbling texture	X	X	X	X		X	X			
Maturity [a]	A	A or B	A	A	A	A	A		A	A
Yield Factors										
Yield grade	3.9[b] or lower				3.9 or lower	3.9[b] or lower	3.9[b] or lower		3.9 or lower	3.9 or lower
Fat thickness (inches)										
Ribeye area (square inches)										
Muscling [c]	X	X	X	X	X	X	X	X	X	X
Hot carcass weight (pounds)										
Carcass Characteristics										
No ribeye muscle internal hemorrhages	X	X	X	X	X	X	X	X	X	X
Free of "dark cutting" characteristics	X	X	X	X	X	X	X	X	X	X
Hump height (inches)	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Steer and heifer beef carcasses	X	X	X	X	X	X	X	X	X	X
USDA Information										
Schedule number	G1	G2	G9	G9	G14	G16	G17	G18	G19	G20
Initial release date	1978	Jul 98	Dec 96	Dec 96	Dec 96	Mar 96	Jun 98	Feb 97	May 98	Oct 98
Effective date	May 94	May 99	Dec 96	Dec 96	Dec 96	Mar 96	Jun 98	Feb 97	May 98	Oct 98
USDA Certified	X	X	X	X	X	X	X	X	X	X
USDA Process Verified										
Management Claims										
Contact program for requirements										
Breed claim										

a-Lean color, texture, firmness, and overall skeletal characteristics, each must meet the requirements for the designated maturity, or younger
b-A yield grade of 3.9 or lower, except carcasses evaluated after removal of all or part of the kidney, pelvic and heart fat may not have a yield grade higher than 3.5
c-Moderately thick or thicker muscling and tend to be moderately wide and thick in relation to their length
X-Indicates program requirement
1-Replaced Ada Angus Beef

Characteristic	Chef's Exclusive	Hyplains Black Angus Beef	Alliant F/S Chef's Ultimate Prime Black Angus	Alliant F/S Chef's Ultimate Black Angus	Alliant F/S Chef's Ultimate Angus	Alliant F/S Chef's Ultimate Select Angus	Monfort Angus Beef	Taylor Packing Company Angus Beef	Pathmark's Black Angus Beef	Grand River Angus Beef [2]
Live Requirements										
GLA-phenotype (51% black)		X	X	X	X	X	X	X	X	X
GLA-genotype							X (Red Angus)			
Quality Factors										
U.S. Prime	X		X	X	X			X	X	X
U.S. Choice	X	X		X	X		X	X	X	X
U.S. Select						X				
Marbling requirements	Modest [00] or higher	Small [00] to Small [50]	Sl. Abndt [00] or higher	Modest [00] or higher	Small [00] or higher	Slight [00] - Slight [99]	Small [00] to Small [99]	Modest [00] or higher	Modest [00] or higher	Small [00] or higher
Medium or fine marbling texture			X	X	X	X	X	X	X	X
Maturity [a]		A	A	A	A	A	A	A	A	A
Yield Factors										
Yield grade		3.9 or lower					3.9 or lower			
Fat thickness (inches)										
Ribeye area (square inches)										
Muscling [c]		X	X	X	X	X	X	X	X	X
Hot carcass weight (pounds)										
Carcass Characteristics										
No ribeye muscle internal hemorrhages		X	X	X	X	X	X	X	X	X
Free of "dark cutting" characteristics		X	X	X	X	X	X	X	X	X
Hump height (inches)		≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Steer and heifer beef carcasses		X	X	X	X	X	X	X	X	
USDA Information										
Schedule number	P2	G21	G22 (A)	G22 (B)	G22 (C)	G22 (D)	G23	G24	G26	G27
Initial release date	Apr 86	Jul 97	Mar 99	Mar 99	Mar 99	Mar 99	Jul 97	Aug 97	Jun 98	Aug 98
Effective date	Apr 86	Jul 97	Aug 99	Aug 99	Aug 99	Aug 99	Jul 97	Aug 97	Jun 98	Aug 98
USDA Certified	X	X	X	X	X	X	X	X	X	X
USDA Process Verified										
Management Claims										
Contact program for requirements										
Breed claim										

a-Lean color, texture, firmness, and overall skeletal characteristics, each must meet the requirements for the designated maturity, or younger
b-A yield grade of 3.9 or lower, except carcasses evaluated after removal of all or part of the kidney, pelvic and heart fat may not have a yield grade higher than 3.5
c-Moderately thick or thicker muscling and tend to be moderately wide and thick in relation to their length
X-Indicates program requirement
2-Replaced Mangus-Murco, Inc.

BEEF PROGRAMS

Characteristic	Premium Gold Angus Prime	Premium Gold Angus Platinum	Premium Gold Angus Blue Ribbon	IBP's Prime Angus Beef	IBP's Choice Angus Beef	IBP's Select Angus Beef	Del Monte Meat's Certified Premium Choice Beef	IBP's Name Branded Beef	Texas T-Bone Express Corp. Black Label	Red Oak Farms Premium Hereford Beef
Live Requirements										
GLA-phenotype (51% black)	X	X	X	X	X	X				
GLA-genotype	X (Red Angus)	X (Red Angus)	X (Red Angus)	X (Red Angus)	X (Red Angus)	X (Red Angus)				
Quality Factors										
U.S. Prime	X			X				X	X	
U.S. Choice		X	X		X		X	X	X	X
U.S. Select			X			X				X
Marbling requirements	Sl. Abndt ^{00} or higher	Modest ^{00} to Moderate ^{99}	Slight ^{40} - Small ^{99}	Sl. Abndt ^{00} or higher	Small ^{00} to Moderate ^{99}	Slight ^{00} - Slight ^{99}	Modest ^{00} to Moderate ^{99}	Modest ^{00} or higher	Modest ^{00} or higher	Slight ^{00} - Moderate ^{99}
Medium or fine marbling texture				X	X	X		X	X	X
Maturity [a]	A/B $^{a(G30)}$	A/B $^{a(G30)}$	A/B $^{a(G30)}$	A	A	A	A	A	A	A
Yield Factors										
Yield grade	4.9 or lower	4.9 or lower	4.9 or lower				3.9 or lower		3.9[b] or lower	
Fat thickness (inches)										1.1 (actual)
Ribeye area (square inches)										
Muscling [c]	X	X	X	X	X	X		X	X	
Hot carcass weight (pounds)										
Carcass Characteristics										
No ribeye muscle internal hemorrhages	X	X	X	X	X	X	X	X	X	X
Free of "dark cutting" characteristics	X	X	X	X	X	X	X	X	X	X
Hump height (inches)	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2
Steer and heifer beef carcasses	X	X	X	X	X	X	Steers only	X	X	X
USDA Information										
Schedule number	G30	G30	G30	G32	G32	G32	G34	G35	G36	G37
Initial release date	Dec 95	Dec 95	Dec 95	May 99	May 99	May 99	Jul 99	Sep 99	Oct 99	Oct 99
Effective date	May 99	May 99	May 99	Oct 99	Oct 99	Oct 99	Nov 99	Oct 99	Oct 99	Oct 99
USDA Certified	X	X	X	X	X	X	X	X	X	X
USDA Process Verified										
Management Claims										
Contact program for requirements										
Breed claim										X (GL 37)

a- Lean color, texture, firmness, and overall skeletal characteristics, each must meet the requirements for the designated maturity, or younger
a(G30)-Lean color, texture, and firmness characteristics, each must meet the requirements for A maturity; skeletal maturity shall not exceed maximum B maturity
b-A yield grade of 3.9 or lower, except carcasses evaluated after removal of all or part of the kidney, pelvic and heart fat may not have a yield grade higher than 3.5
c-Moderately thick or thicker muscling and tend to be moderately wide and thick in relation to their length
X-Indicates program requirement

Characteristic	Federal Beef Processors - Black Hills Angus Beef	American Foods Group Black Angus Reserve Prime	AFG Black Angus Reserve Premium Choice	AFG Black Angus Reserve Choice	AFG Black Angus Reserve Select					
Live Requirements										
GLA-phenotype (51% black)	X	X	X	X	X					
GLA-genotype										
Quality Factors										
U.S. Prime	X	X								
U.S. Choice	X		X	X						
U.S. Select					X					
U.S. Commercial	X									
Marbling requirements	Modest ^{00} or higher	Sl. Abndt ^{00} or higher	Modest ^{00} to Moderate ^{99}	Small ^{00} - Small ^{99}	Slight ^{40} - Slight ^{99}					
Medium or fine marbling texture										
Maturity [a]	Choice/C a(G38)	A/B a(G39)	A/B a(G39)	A/B a(G39)	A/B a(G39)					
Yield Factors										
Yield grade	4.9 or lower									
Fat thickness (inches)										
Ribeye area (square inches)										
Muscling [c]	X	X	X	X	X					
Hot carcass weight (pounds)										
Carcass Characteristics										
No ribeye muscle internal hemorrhages	X	X	X	X	X					
Free of "dark cutting" characteristics	X	X	X	X	X					
Hump height (inches)	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2					
Steer and heifer beef carcasses	X	X	X	X	X					
USDA Information										
Schedule number	G38	G39	G39	G39	G39					
Initial release date	Dec 99	Dec 99	Dec 99	Dec 99	Dec 99					
Effective date	Dec 99	Dec 99	Dec 99	Dec 99	Dec 99					
USDA Certified	X	X	X	X	X					
USDA Process Verified										
Management Claims										
Contact program for requirements										
Breed claim										
Special notes	Expires 6/30/00									

a- Lean color, texture, firmness, and overall skeletal characteristics, each must meet the requirements for the designated maturity, or younger
a(G38)-Lean color, texture, and firmness characteristics, each must meet the requirements for U.S. Choice; skeletal maturity shall not exceed maximum C maturity
a(G39)-Lean color, texture, and firmness characteristics, each must meet the requirements for A maturity; skeletal maturity shall not exceed maximum B maturity
b-A yield grade of 3.9 or lower, except carcasses evaluated after removal of all or part of the kidney, pelvic and heart fat may not have a yield grade higher than 3.5
c-Moderately thick or thicker muscling and tend to be moderately wide and thick in relation to their length
X-Indicates program requirement

BEEF PROGRAMS

Characteristic	Certified Hereford Beef	Belle Brook Belgian Blue	Certified Piedmontese Beef	Red Angus Assn. of America	Tennessee Belgian Blue	PM Beef Group				
Live Requirements										
GLA-phenotype (51% black)										
GLA-genotype				X (Red Angus)						
Quality Factors										
U.S. Prime										
U.S. Choice	X					X				
U.S. Select	X					X				
Marbling requirements	Slight ^{00} - Moderate ^{99}		Small ^{10} or lower			Slight ^{00} or higher				
Medium or fine marbling texture	X									
Maturity [a]	A	A			A					
Yield Factors										
Yield grade	3.9 or lower		2.9 or lower							
Fat thickness (inches)			0.0-0.35 (adjusted)			≤ 0.7 (actual)				
Ribeye area (square inches)			≥ 11.5			11.0 - 17.0				
Muscling [c]										
Hot carcass weight (pounds)	600 – 950		≤ 850			600 - 950				
Carcass Characteristics										
No ribeye muscle internal hemorrhages	X		X			X				
Free of "dark cutting" characteristics	X		X			X				
Hump height (inches)										
Steer and heifer beef carcasses	X		X			X				
USDA Information										
Schedule number	G10									
Initial release date	Jan 96	Sep 95	Oct 97	Sep 95	Aug 96	Feb 98				
Revision date	Jan 99	Sep 95	May 99	Sep 95	Aug 96	Feb 98				
USDA Certified	X		X			X				
USDA Process Verified	X	X	X	X	X	X				
Management Claims										
Contact program for requirements	X	X	X	X	X	X				
Breed claim	X	X	X	X	X					

a-Lean color, texture, firmness, and overall skeletal characteristics, each must meet the requirements for the designated maturity, or younger
b-A yield grade of 3.9 or lower, except carcasses evaluated after removal of all or part of the kidney, pelvic and heart fat may not have a yield grade higher than 3.5
c-Moderately thick or thicker muscling and tend to be moderately wide and thick in relation to their length
X-Indicates program requirement

PORK PROGRAMS

Characteristic	Premium Standard Farms	Excel Corp., Sterling Silver Pork								
Live Requirements										
Genetic-based	X									
Source Verified	X									
Quality Factors										
Color score - Japanese color buttons		X								
Yield Factors										
Percent Lean										
Hot carcass weight (pounds)										
USDA Information										
Initial release date	Dec 98	Feb 99								
Revision date	Dec 98	Feb 99								
USDA Certified		X								
Institutional Meat Purchase Specifications (IMPS)		X								
USDA Process Verified	X									
Management Claims										
Contact program for requirements	X	X								

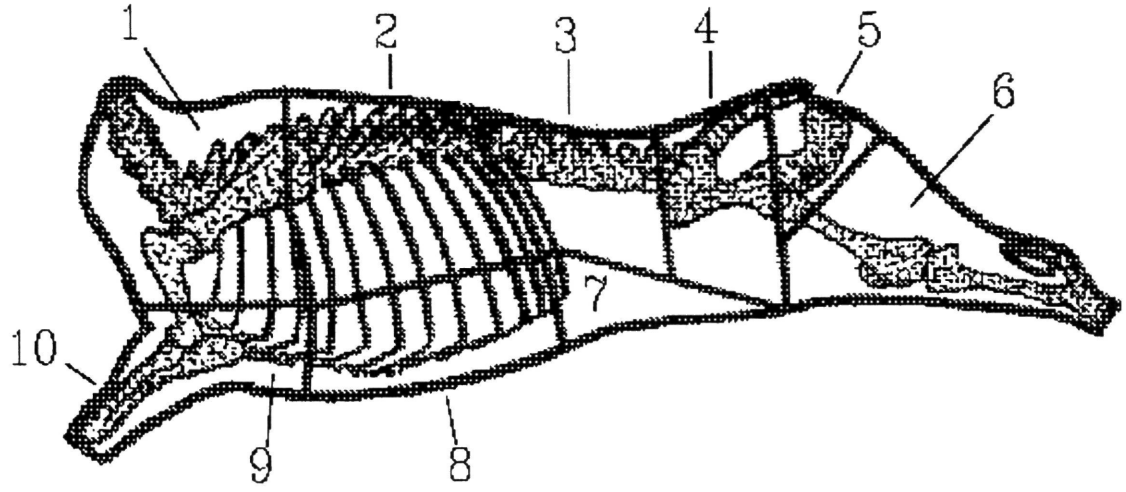
X-Indicates program requirement

MEAT CUTS & GRADING

Here is a Roman butcher in action, but we will only look at meat cutting for Canada (which is the same as the US), England, and Japan.

Cuts of beef

The first step in breaking the carcass is to separate it into primal cuts that can be handled more easily. The primal cuts correspond fairly closely to the units that a retail butcher might order from a wholesaler or abattoir. The primal cuts of beef are shown below. The separation of the forequarter and the hindquarter leaves only the last rib on the hindquarter.

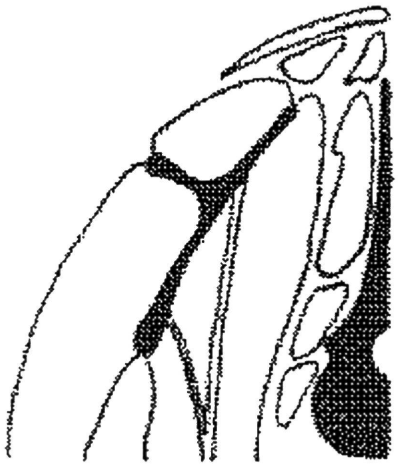


- 1 = rib,
- 3 = short loin,

- 4 = sirloin,
- 5 = rump,
- 6 = round,
- 7 = flank,
- 8 = plate,
- 9 = brisket,
- 10 = shank.

On the hanging side of beef, count seven vertebral centra down from the sacral-lumbar junction, add on just less than the length of a half a centrum, and cut perpendicularly through the vertebral column at this point with a saw. Separate the forequarter from the hindquarter by cutting through the intercostal and abdominal muscles, following the curvature of the twelth rib. The forequarter can be dropped onto a table or held suspended by its own hook from a hoist.

- Separate the **chuck**



from the **rib** with a perpendicular cut through the vertebral column, level with the intercostal muscles between the dorsal parts of ribs 4 and 5.

- Separate the **rib** from the **plate** by an anterior to posterior cut. This separation may be made much nearer to the vertebral column than the shown in the diagram.
- Separate the chuck from the **brisket** by a cut that is perpendicular to the fourth rib at a point about 1 cm proximal to the olecranon process of the elbow.
- The **shank** may be cut into thick slices, the shank knuckle slices are proximal.
- Before breaking the hindquarter, trim off the excess fat near the pubis and over the posterior part of the abdominal muscles. Anterior to the rectus femoris, at a point where the **tensor fascia lata** muscle reaches its most distal extent, start a separation that ends on rib 12, about 20 cm from the vertebral column. This detaches the **flank**.
- Separate the **round** from the **rump** with a cut that passes about 1 cm distal to the ischium and terminates just after passing through the head of the femur.
- Separate the rump from the **sirloin** with a cut that passes between sacral vertebrae 4 and 5, and terminates just ventral to the acetabulum of the pelvis.
- Separate the sirloin from the **short loin** with a cut that is perpendicular to the vertebral column and which passes between lumbar vertebrae 5 and 6.

The primal cuts next are separated into retail cuts. Here they are given an approximate rating according to tenderness,

* less tender cuts to braise, stew or pot roast,

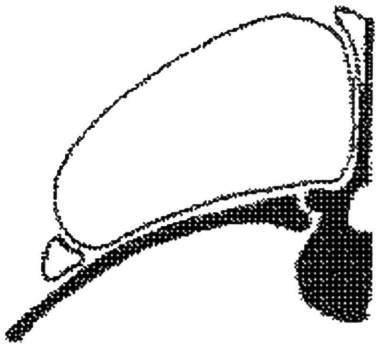
** medium tender cuts, good for cooking by moist heat,

*** tender meat for roasting, broiling or frying.

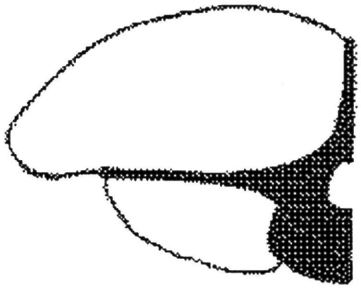
- The rib cut is separated into rib steaks*** or standing rib roasts*** by cuts made perpendicularly to the vertebral column. Rib-eye*** or delmonico*** steaks are composed of sections of the spinalis dorsi together with the

longissimus dorsi muscle.

- **If you are new to this game, a key point to note is how to distinguish steaks through the rib region**



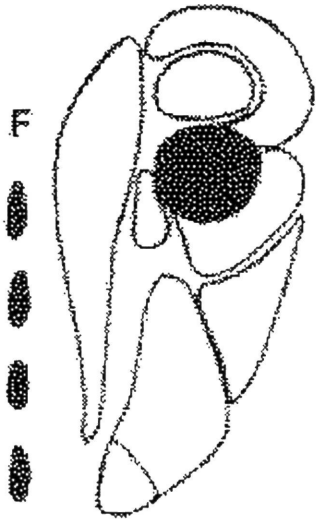
from those through the loin.



RIB versus TRANSVERSE PROCESS OF LUMBAR VERTEBRA

ONE EYE OF MEAT versus TWO EYES OF MEAT

- The chuck is sliced in planes that are parallel to rib 4 to make blade steaks** or blade pot roasts**.
- Arm steaks*, arm pot roasts* or cross cut ribs*



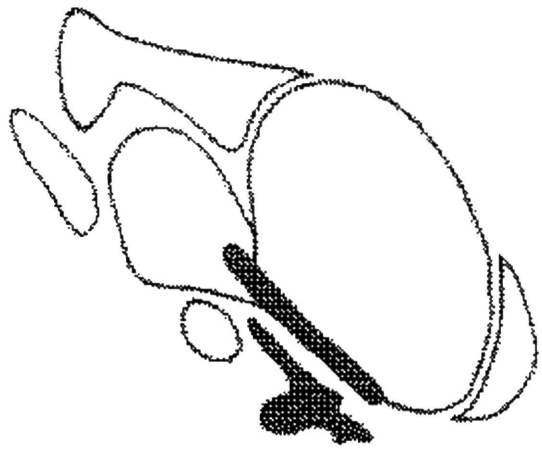
are sliced off perpendicularly to the humerus.

- Brisket* is sold in chunks to be braised or cooked in liquid. The shank* is cut into thick slices that are perpendicular to the radius and ulna.

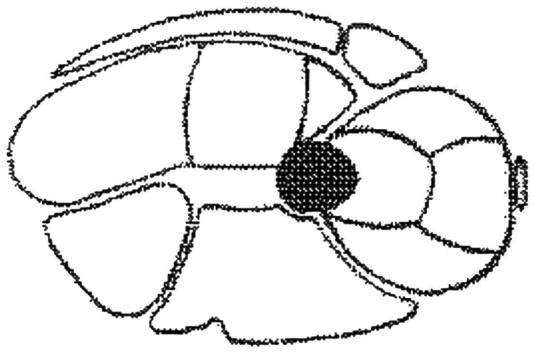
- The plate may be divided into cubes of rib bone and muscle, and sold as short ribs*. The flat mass of meat located ventro-laterally to the rib cage is usually rolled, tied, and cut into cylindrical cuts of plate*.
- Abdominal muscles may be isolated from the flank to make flank steaks*.
- The short loin is sliced into steaks perpendicularly to the vertebral column.


Top loin steak with large eye of **longissimus dorsi**

  - The most anterior steaks are the **wing or club steaks*****, and nearly all their meat is derived from the longissimus dorsi.
  - Next are the **T bone steaks***** and these gain extra meat from the psoas major towards the posterior end of the loin.
  - Last are two or three **porterhouse steaks*****. These have large areas of meat derived from both the longissimus dorsi and the psoas major. In the porterhouse region at the posterior end of the short loin, the vertebrae can be removed from the steaks to create **New York strip steaks***** (longissimus dorsi) and **tenderloin** or **filet steaks***** (psoas major and minor).
  - In a restaurant with a French menu, the longissimus dorsi may appear as **Biftek de Contre Filet** and the psoas muscles as **Filet Mignon**.
- The steaks cut perpendicularly to the shaft of the ilium in the sirloin are named by the shape of the sectioned ilium.



These steaks are, from anterior to posterior,
  - (1) **pin bone sirloin steaks***** named from the oval section of the anterior projection of the ilium,
  - (2) **flat bone or double bone sirloin steaks***** named from the flat sections of the wing of the ilium where it joins with the wing of the sacrum,
  - (3) **round bone sirloin steaks***** named from the round sections of the slender shaft of the ilium, and
  - (4) **wedge bone sirloin steaks***** named from the triangular cross section of the ilium near to the acetabulum.
- The triangular shape of the rump and the complex shape of the pubis, ischium and the head of the femur make this cut difficult to handle. If the bones are carefully removed, slices of rump steak** may be cut quite easily, or the cut can be left in large chunks as standing rump** or boneless rump**.
- The round



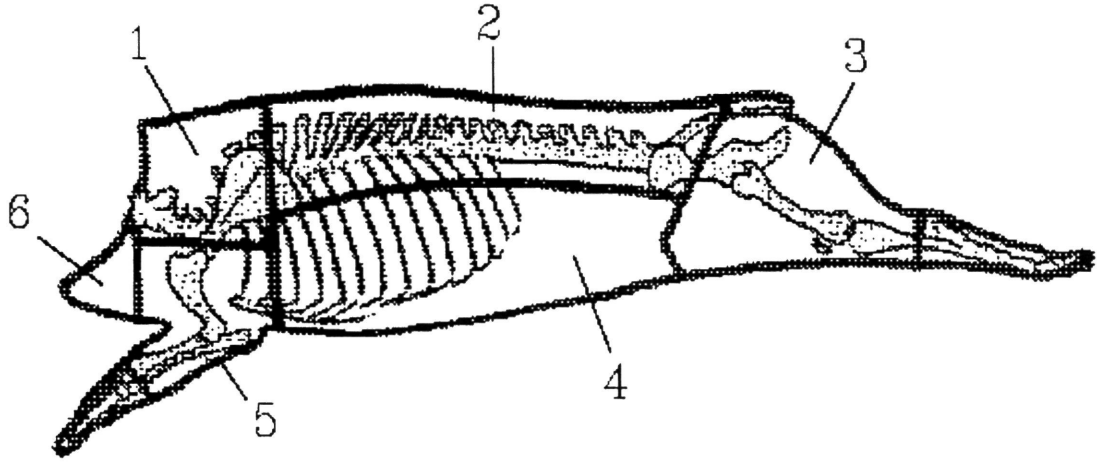
may be cut into **full cut round steaks**** that are perpendicular to the femur, or it may be cut into large pieces of meat parallel to the femur to create the**inside or top round**** (mostly semimembranosus and adductor) and the **outside or bottom round**** (mostly semitendinosus and biceps femoris). The semitendinosus sometimes is detached and slices may be sold as the**eye of the round****.

- The **sirloin tip**** is a cut from the round that includes the muscles which pull on the patella.

Cuts of veal

Veal carcasses are smaller than beef carcasses and there is less need to subdivide the carcass into primal cuts. Typical primal cuts are the forequarter, loin (from scapula to ilium), flank (from mid-sternum to tensor fascia lata), and leg (including sirloinX). The cuts of veal are quite small, and many of the beef names are used since the overall pattern for beef is followed. The brisket usually is called the **breast** in the veal carcass. The equivalent region to the T bone may be called a **kidney chop** if the kidney has been left in place and sectioned with the chop. Differences in tenderness between cuts of meat from various parts of the veal carcass are far less pronounced than for the beef carcass.

Cuts of pork



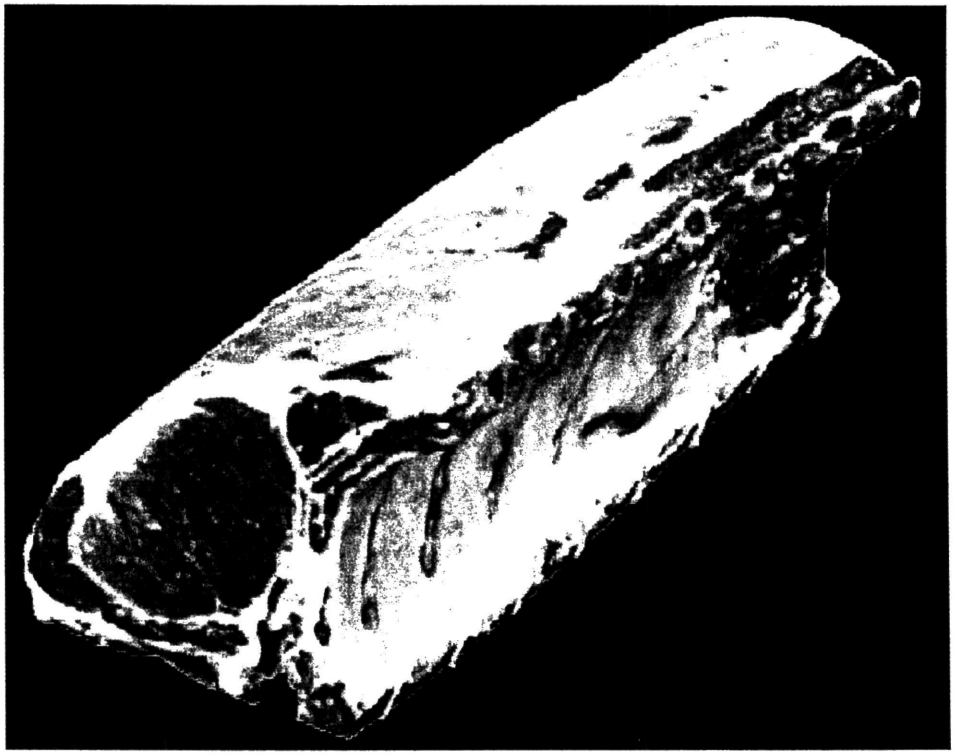
- Remove the hind foot with a cut through the tuber calcis. Remove the front foot with a cut that is just distal to the ulna and radius.
- Remove the **leg** with a cut that starts between sacral vertebrae 2 and 3 and which is then directed towards the tensor fascia lata.
- The cutting line is then changed so that most of the tensor fascia lata is incorporated into the leg.
- The **butt and picnic** are removed together as a **shoulder**, by a cut that is that is perpendicular to the vertebral column and which starts between thoracic vertebrae 2 and 3. The butt is separated from the picnic by a cut that skims past the ventral region of the cervical vertebrae at a tangent. This keeps the top of the picnic relatively square.
- The **jowl** is removed from the picnic with a cut that follows the crease lines in the skin.
- The remainder of the side of pork is split into the **loin and belly** by a curved cut that follows the curvature of the

vertebral column. One end of the curve is just ventral to the ilium, the other end is just ventral to the blade of the scapula.

- The **loin**

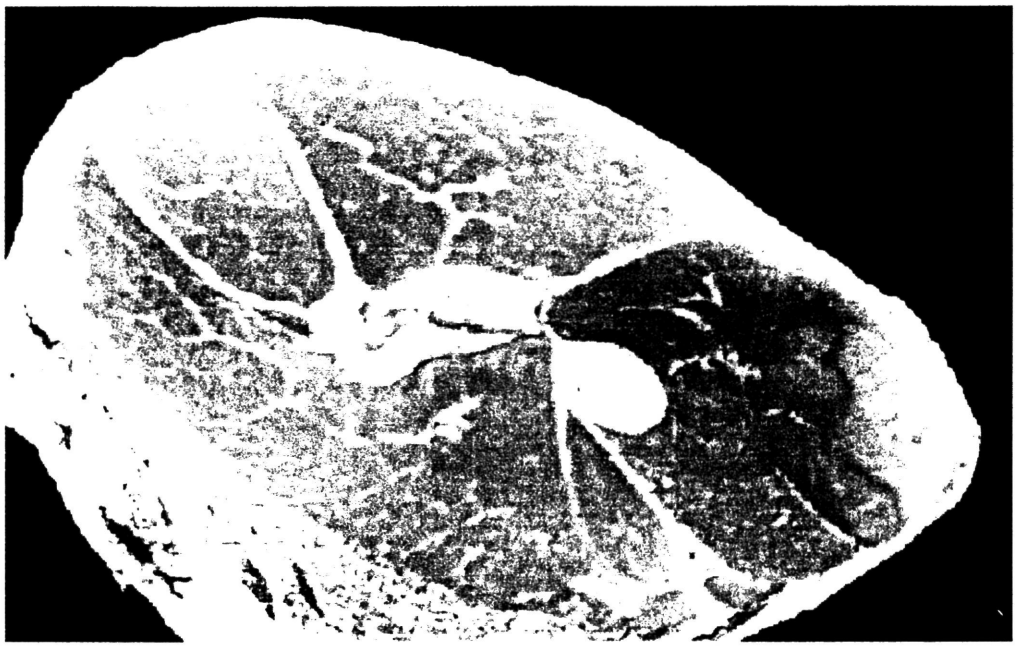
may be divided into a continuous sequence of chops. From anterior to posterior these are the
  - **rib chops,**
  - **center loin chops and**
  - **tenderloin chops.**

They can all be cooked satisfactorily by dry heat. Alternatively, the thoracic, lumbar and iliac regions may be left intact as large roasts,



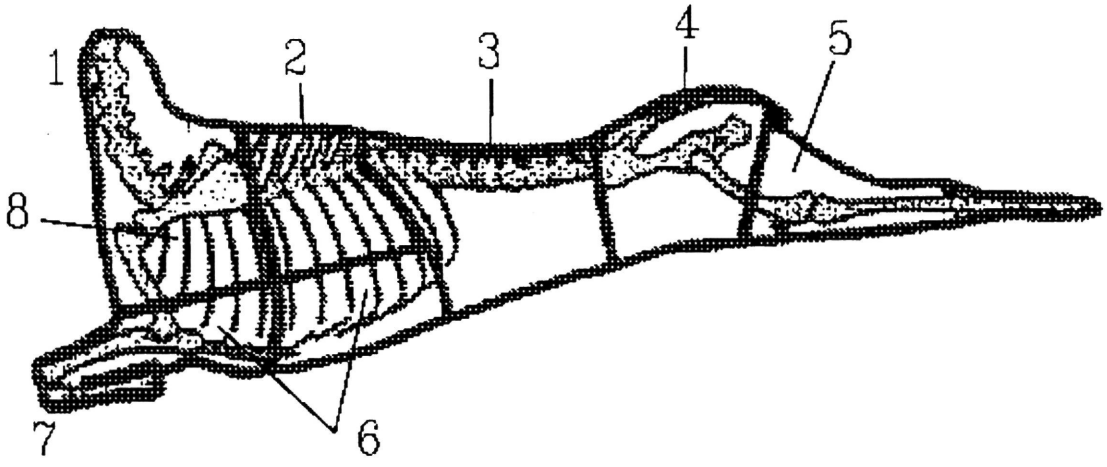
  - **the rib end roast,**
  - **center loin roast and**
  - **tenderloin end roast.**

- The psoas muscles may be removed from the lumbar region to make **tenderloin** and the longissimus dorsi and adjacent small muscles may be removed from the vertebral column, and rolled and tied to make boned and rolled **loin roast**.
- A **crown roast** can be made by twisting the thoracic vertebral column into a circle so that the stumps of the ribs radiate outwards like the points of a crown. This facilitates the rapid carving and distribution of portions at a banquet.
- The longissimus dorsi may be cured and smoked to make **Canadian Style bacon** or (as it is more often called within Canada) **peameal bacon and back bacon**.
- The rib cage plus its immediately adjacent muscles are removed from the belly to make the **spare ribs**.
- The remaining muscles of the abdomen, together with those that overlap the ribcage for their insertion, constitute the side of pork. Side of pork may be cured and smoked to make **slab bacon**.
- The picnic may be sliced to make **picnic shoulder chops** through the humerus, or it can be partly subdivided to make picnic shoulder roasts. Picnic shoulder roasts may be boned and rolled, or smoked and cured in a variety of ways.
- The butt, or **Boston butt**, is usually divided into a number of blade steaks that are cut from dorsal to ventral through the scapula. The more anterior part then forms a butt roast.
- The leg may be subdivided to create, from proximal to distal, the **butt end roast** and the **shank end roast**. Alternatively, the leg may be cured and smoked to make **ham**.



- The feet, the hocks, the knuckles and the tail can be baked or cooked in liquid and consumed enthusiastically with a large quantity of draft beer.

Cuts of lamb



- The **sirloin** plus leg, or pin bone leg, is removed by cutting perpendicularly through the vertebral column at a point level with the anterior face of the ilium.
- In the lamb carcass, the **loin** includes part of the abdominal wall. The loin is removed by a cut that passes between ribs 12 and 13 and which then continues perpendicularly through the vertebral column.
- Sometimes the whole **breast** and the **shank** are removed with a single cut from the anterior of the sternum to the ventral part of rib 11.
- Alternatively, the dominant cut may be made between ribs 5 and 6, to separate the **rib**from the **shoulder**, and to divide the breast into anterior and posterior sections. In the diagram, note how the metacarpal cannon bone is fixed back so that the carcass can be more easily transported.

Differences in the tenderness of lamb muscles may become apparent in carcasses from older animals, and the pattern of consumer use reflects the method of cooking required. The notation of asterisks (*) that was used for beef, is used again in this paragraph.

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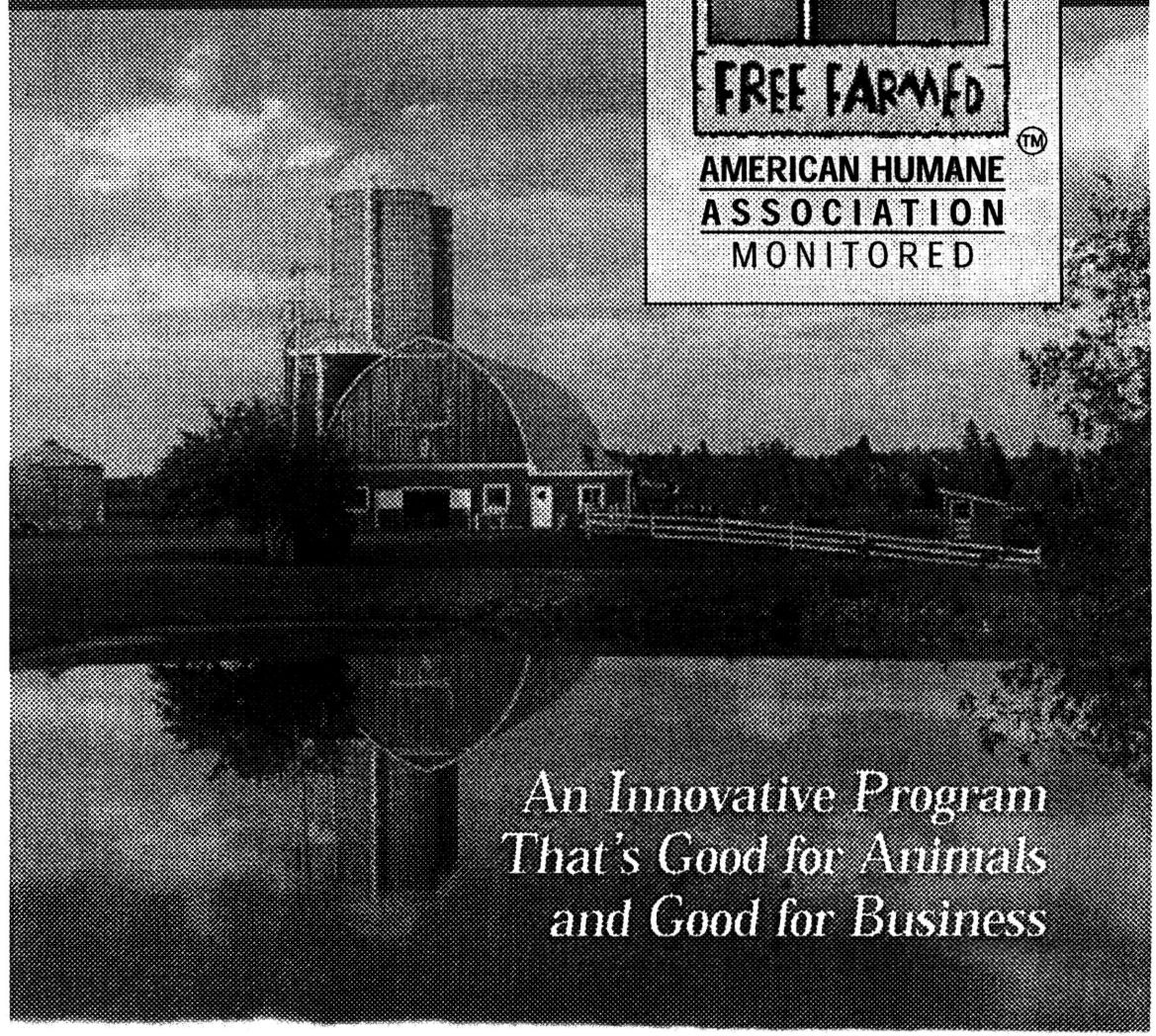

An Innovative Program That's Good for Animals and Good for Business