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July, 1995

THE GRASS PROFIT PAPER

Volume 52, Number 7

SERVING NORTH AMERICAN GRASS FARMERS SINCE 1947. BEEF/DAIRY/SHEEP/GOATS/PIGS/POULTRY

Finishing Cattle on Pasture

by Henry Bartholomew and Fred Martz

Typically, we have thought of pastures as places where beef cows and stockers can hang out during the spring and summer, eat essentially free feed, and produce a calf or put on a few pounds. With the introduction of Management-intensive Grazing (MiG) we can get serious about producing beef on pasture and perhaps even finish cattle on grass. Our competitors in New Zealand do not use grain supplements, due to cost of grain (\$6.60 per bushel, Feb.95). They are working very hard on pasture systems that would allow them to reach USDA choice grade without taking the cattle through a second winter, which would greatly increase their costs. While New Zealand has a longer growing season and milder winters, we have "cheap corn." Our pastures can be just as productive and of just as high a quality as those in New Zealand.

Most cow-calf producers have been reluctant to change their marketing practices and so they continue to sell their calves in the fall. The

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stocker cattle industry in the mid-west typically purchases calves in late winter and grazes them for the

summer, usually putting 200-300 lbs of gain on the animals before selling them to a feedlot to finish. The beef industry has segmented into cow-calf, stocker, and finishing segments, resulting in increased stress on calves, several truck rides around the country (in fact, the average beef steer has seen more of the United States than the farmer who raised him), and many adjustment periods for the cattle with the resulting increased death loss and sickness. If finishing cattle on grass can produce a desirable carcass at competitive prices, the cattle finishing industry may be shifted back east to high quality pastures and dispersed in smaller herds over larger areas, creating a much more sustainable livestock enterprise and industry.

Feed costs per pound of gain for finishing cattle in U.S. feedlots usually run in the \$.45-\$.50 range. Costs for gain on pasture alone are less than \$.20 per pound. A combination of high quality pasture supplemented with grain to increase rate of gain and carcass quality grade should cost in the realm of \$.25-\$.30 per pound of gain, a considerable savings over traditional feedlot operations.

Research work on pasture finishing beef has been conducted in Missouri at the Forage Systems Research Center. Much remains to be worked out before we have definite answers, but here are some ideas and informed guesses of how to start if you don't have 5 or 10 years to wait for answers.

1. High quality pastures are a must. 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



Yes, there is a real Laura at the helm of Laura's Lean Beef and here she is.

Laura's Lean Beef

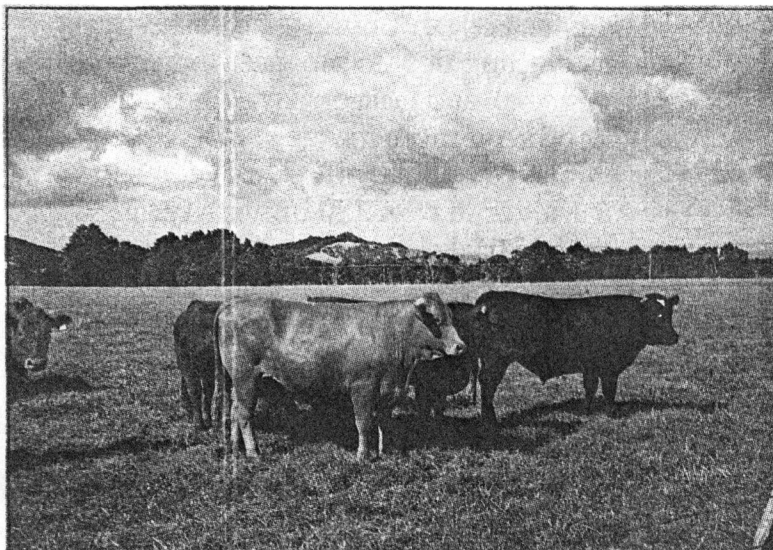
by Allan Nation

LEXINGTON, Kentucky: From an inauspicious start as a value adding experiment to a family stocker operation in 1985, Laura's Lean Beef has grown to a \$20 million business today employing 30 people and selling genetically lean meat from Houston to Chicago to New York City.

President and spokesperson, Laura Freeman, is the "Laura" of "Laura's Lean Beef (LLB)." Her partner is John Tobe, former CEO for Long John Silver's Restaurants. With a huge smile Laura recently told her staff, "I am proud to announce that Laura's Lean Beef is now completely and totally out of debt."

A recent national endorsement by the American Heart Association has sent sales on a rocket-like upward trajectory and has LLB scrambling to find more cattle that will fit the very tight specifications of the premium-priced, lean beef niche.

"We like Limousin cattle and their



This group of grass Hereford steers nearing slaughter in the "finishing zone" in New Zealand. Australia and Argentina traditionally kill their cattle at lighter weights than in the United States to prevent having to overwinter very heavy steers. An 18 month grass finished program requires both a high average daily gain and early maturing cattle as this article explains.

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Finishing Cattle on Pasture

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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. Save dirty fescue to winter animals on. Finishing cattle should be on a 1-2 day schedule between pasture shifts. The quality of the pasture will vary too much over the occupation period if we move the cattle less frequently. Essentially, the pasture management and quality would be similar to what a successful dairy producer would be using.

2. Pastures should be kept vegetative - *no seedheads* - and 6-10 inches in height at turn-in. The cattle being finished, the first grazers, should eat only 40-50% of the available pasture to have maximum gains. They should be moved to a new paddock when average forage height is 3-4 inches. Pastures are more dense as you go deeper into the canopy; therefore, grazing a pasture from 10 inches to 5 inches will result in less than one-half of the pasture mass being removed. Consequently, you should have another class of animal with lower nutrient requirements, such as brood cows or younger stockers that you are growing, as the second grazers to eat remaining pasture down to 2-3 inches. Otherwise, someone is going to spend a lot of time on a mower to keep the pastures in condition. Even if you have cattle that you want to put on full feed (2% of body weight as grain), you might consider having this group be your second grazers. The quality of the forage that they eat is not going to be important. They will be cleaner and happier than penned up in a feedlot.

It is very important that old stemmy and dead plant material be removed so that every bite for the first grazers is the best quality possible. Our goal is to have the first grazers fill up on pasture with minimal effort and lay down. In essence, live the good life.

3. It makes no sense to substitute grain feeding for pasture as long as pasture growth is adequate, unless cattle are approaching slaughter weight. The amount of grain to feed will depend on the producer's goals, the price of grain, and the market you are producing for. Some producers can develop markets for natural grass-fed beef and may choose to feed no grain, while others marketing through traditional channels may have to feed more grain to satisfy the market.

Amount of grain supplement, if any, should be varied with the season.

In the spring when pasture quality is high, grain should be limited to 0.5% of the animal's body weight. A group of fifty 600 lb steers would have 30,000 lbs total body weight. Grain supplement would be only 150 lbs per day. At these levels there would be

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to have first grazers
live the good life.*

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very little substitution of grain for pasture. Later in July when higher temperatures typically increase lignin content of the forage and reduce pasture quality, the grain can be increased to 1% of body weight, or even higher if forage availability is inadequate. The old rules about how much grain can be fed with forage without depressing fiber digestion were developed for the most part from research conducted on machine harvested forage that is much less digestible than the lush pasture that animals can harvest. High quality pasture fiber is much easier to digest; the rate of passage through the digestive tract is faster; and higher levels of starch (grain) in the diet do not depress fiber digestion from the pasture as significantly.

4. Grain can be fed on the ground if you do not have bunks or do not want to bother dragging bunks from paddock to paddock. Wet soil is the biggest concern when feeding on the ground. Use the bunk space under the electric wire to reduce waste from trampling. Work done in Missouri and other locations indicates losses of 5% or less, when feeding is done on the ground, about the same as a self-feeder. Waste will increase when grain feeding exceeds 1.5% of body weight. Grain fed at 2% of body weight is considered at or near full feed. The grain should be fed after the cattle have had their big morning graze. Grazing usually begins at daylight, with occasional breaks to rest. By noon the animals have 70-80% of their grazing in for the day. Feeding

grain between noon and 4 pm should minimize grazing disruption. Feeding in this time window has been reported to increase gains and feed conversion as much as 20%. As the amount of grain that is fed increases over 1% of body weight, consideration should be given to dividing the grain into more than one feeding to prevent acidosis.

The jury is still out over whether the grain needs to be processed or whether whole grain works as well. It may depend on your costs to get grain processed. Shelled corn will work and cattle should clean it up better off the pasture than ground grain. Protein supplements are not necessary if pasture is 16% or higher in crude protein. Equal parts di-calcium phosphate and trace mineral salt should be offered to supplement mineral needs. Grain offers increased flexibility for the producer to ration forage supply during periods of short forage growth. Remember, if you feed grain you can increase stocking rate, pounds of live weight per acre, because cattle will eat less pasture. If a half feed of grain is fed (1% of body weight), stocking rate should be

increased 40-50% to get paddocks grazed down in the 1-2 days.

While the phosphorous and potassium in grain is not great, each bushel of corn fed has .37 lb of P2O5 and .27 lb of K2O, the majority of which will be returned to your pastures as free fertilizer. This amounts to \$.14 per bushel at current fertilizer prices.

A word about type of cattle: It is with great trepidation that we bring up this topic. This is akin to suggesting what brand of pickup you should drive. But this system will not work for large frame animals. Those big guys will just keep getting taller and taller and taller and...bigger. It will work best for producers with small to medium frame cattle that will finish at 1050-1200 lbs. Cattle need to be marketed before their second birthday to insure tenderness and to stay within the "A" maturity group in the USDA quality grades. Do not worry about producing choice grade carcasses. Many times the price difference between the choice and select grade is \$.08 per pound or less. If you can get a cost advantage using pasture, do it. Quality select beef tastes good, too.

Beef cow-calf producers in the humid east should seriously consider

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