

Profitable

DAIRY OPTIONS

Grazing • Marketing • Nutrient Management

Research and innovations from the USDA Sustainable Agriculture Research and Education (SARE) program and Agriculture in Concert with the Environment (ACE), a joint USDA/U.S. EPA program.

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HARNESS PASTURE POWER

Grazing delivers premium feed at low, low cost.

Farmers at the center of a movement to pasture-based dairying feel confident about their future. They're convinced it will be more profitable. But that's not all.

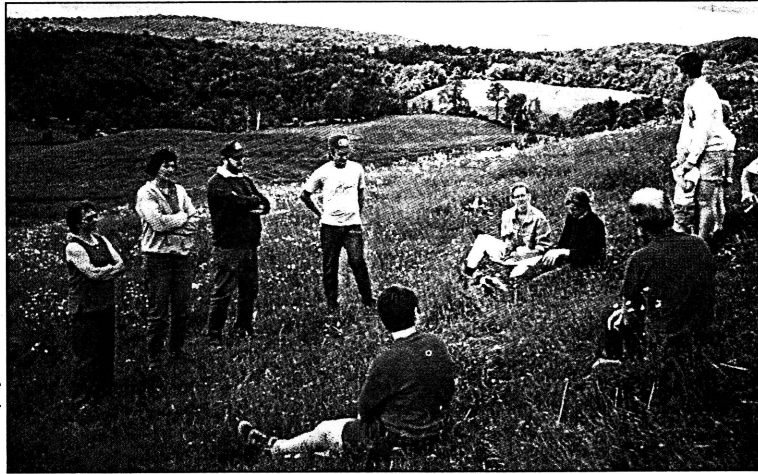
"After '93, we had no hope. We were \$10,000 in the red and ready to sell out," says Sarah Russell of Sudbury, Vt. "But we changed enough through grazing our cows in '94 to make \$14,000, and now we really *like* what we're doing. It's made a tremendous difference on our farm."

Sarah and Mark, her husband, milk 55 cows and are members of a pasture-user support group in Vermont. "We all face similar problems, and we've learned there's more than one way to respond," she says.

Wisconsin grazing pioneer Charlie Opitz milks 1,000 cows. Dave Forgey of Logansport in north central Indiana milks 130. Both depend on well-managed pasture. The documented success of farmers with many individual versions of grass-based dairy production allows other producers to examine the economics and management of these new approaches.

Reports from farmers within and beyond the traditional Dairy Belt agree that the growing passion for pasture is often tied to a spirit of farmer-to-farmer support and cooperation. "Farmers in the pasture-user groups say they experience a renewed sense of community that had been lost," says Dr. Bill Murphy, a pasture management specialist at the University of Vermont. He has directed research projects in the state for USDA's Northeast Region Sustainable Agriculture Research and Education (SARE) program.

"This is an alternative to working hard at confinement dairying where you have nothing to show at the end of the year but



Bill Murphy

Pasture walks help dairy producers learn skills in managing forage-based production.

bills and more work the next year," he points out. Grazing can greatly enhance a farm family's overall quality of life. "The improvement comes naturally when you have more disposable income and less labor demand," says Murphy.

Farmers and researchers in Vermont and West Virginia have cooperated in pasture projects supported by the Northeast Region SARE since 1988. They've found that:

◆ **Cows will eat up to 50 percent more pasture forage than previously thought.** When pasture is well-managed, cows can consume up to 3 percent of their body weight in forage dry matter, University of Vermont researcher Jim Welch found. Most ration-balancing programs assume pasture consumption of only 1.8 to 2.0 percent body-weight in forage dry matter per day, based on poorly managed pastures. But when Welch balanced rations based on the 3-percent intake estimate, fat-corrected milk yields were not reduced compared with rations based on the 2-percent estimate.

Well-managed grazing works so well that some Vermont producers cut feed bills in half while they slashed barn labor.

At savings of up to \$1 per day per cow in supplemental grain costs, this finding can be pivotal to farm profitability. The long-term effect of feeding little or no concentrate on cow reproduction, longevity and body condition is still under study.

◆ **Grazing can increase profit through cutting feed costs.** This is a leading factor to improved farm profitability for Vermont graziers, because feed costs are often the single largest expense for dairy farms. For most farms using management intensive grazing, this expense decreases greatly relative to confinement feeding. The Russells, for example, lowered their feed costs

Rising to the Challenge

Many dairy producers who face economic and regulatory challenges are trying alternative dairy production and marketing systems to increase their sustainability. Some see their best opportunity in lower-cost production through management-intensive grazing. Others opt for higher production in confinement settings combined with pasture management.

This publication features research and farmer experiences related to rotational grazing (pages 1, 3, 6 and 8), alternative marketing (page 7) and crop-system nutrient management (pages 4 and 5).

The USDA Sustainable Agriculture Research and Education program welcomes proposals from researchers and producers to explore these and other options. To learn more about research and education opportunities with the program, contact one of the offices listed on page 8.

per hundredweight of milk produced from \$9.18 in '90 with confinement feeding to \$3.72 in '94 under management-intensive grazing.

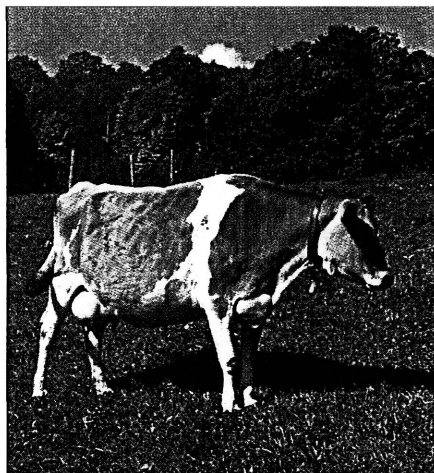
One of the farmers studied, Mike Hanson, Fairfax, Vt., increased his farm's profit in '92, his first year of grazing. He reduced daily work hours in the barn by 59 percent that year, in part by not feeding haylage during the growing season as he had previously. Mathematical modeling of Hanson's results shows that grazing can increase profit and lower costs at all production levels for both Holstein and Jersey herds.

There's a further long-term gain for producers who sell equipment after determining that growing corn is unprofitable on their farms, according to Jon Winsten, a UVM agricultural economist who analyzes farm profitability. For them, buying corn products can be more efficient. As profits rise and costs decrease, these farmers increase their rate of return on farm assets—a primary gauge of farm business profitability.

◆ **Grazing management demands flexible skills.** "From year to year, weather has the biggest effect on pasture quality and quantity," says animal scientist Edward Prigge. "Farmers have to alter their grazing strategy for each kind of season." He and other specialists from West Virginia University compared forage-based systems for beef production.

"All our computer modeling shows us that you can't have a rigid grazing procedure," says Prigge. "You have to know the factors that influence the productivity of *your* animals and *your* pasture. The goal is to keep forage at the height that will give the best animal performance—about 3.5 inches, we've found."

◆ **Supplemental energy keeps production strong.** While well-managed pastures can deliver plenty of protein, dairy



T.L. Gettings

Guernsey and Jersey cows are often strong producers on pasture.

farmers need to feed high-energy rations that complement forage quality and type. Pasture support group members find that feeding corn silage or corn meal with high-quality pasture forage are least-cost ways of producing milk.

Balancing rations of cattle on pasture requires careful monitoring of causes (pasture quality and consumption) and effects (cow condition and milk production). Simplifying the supplemental feeding reduces management challenges and can pave the way for more changes. The Russells' first departure from conventional feeding was to switch to cornmeal and soy pellets with minerals.

Other producers report balancing lush pasture with 12-percent protein pellets of corn and wheat middlings, Murphy notes. The Russells' move proved so successful that they also adopted seasonal production, meaning they dry off the whole herd for about two winter months to synchronize their herd's nutritional demand with spring pasture growth.

Cutting out *all* feed harvesting streamlines pasture-based farm management. Jack Brigham, St. Albans, Vt., began grazing his 60-cow herd in '86 and quit harvesting grass forage in '87. "We had \$100,000 in tractors and harvest equipment, plus the labor and cost of harvesting mediocre crops that didn't produce all that much milk," Brigham recalls.

The change continues to be a tremendous relief to Jack and his brother each harvest season. In '95, they upped their herd to 250 cows to more efficiently graze their 60 acres of high-quality pasture, and to allow Jack to quit his off-farm job.

"Most cornfields in Vermont are better suited to permanent pasture," claims Murphy. He says environmental benefits of increasing grazing while reducing corn production would include:

Grazing In A Nutshell

Management-intensive grazing maximizes the feed potential of pasture. The farmer, called the "grazier," monitors height, density and maturity of grasses and legumes within the pasture, and controls grazing activity to let livestock—the grazers—harvest forages of the highest nutritional quality.

By fencing small areas of pasture into paddocks, graziers control how livestock will affect pasture quality through timing livestock entry and exit, and by the number of animals turned out.

In exchange for the knowledge investment needed to keep cows on lush pasture with fresh water, graziers gain more productive pasture, less need for machine-harvested crops and lower cost per hundredweight of milk produced. The primary investments are capital for fencing and water systems and a commitment to learn pasture management that fits each farm. New

fencing and watering technology makes pasturing much easier, more flexible and more affordable than a generation ago.

Important skills include:

◆ **Timing.** The goal is to keep pasture plants as palatable and nutritious as possible by keeping them "vegetative," the stage before seed production starts. Weather and forage species influence when to use animal grazing or mechanical mowing to stimulate regrowth.

◆ **Paddock design.** The grazier may need to harvest forage in some form from half of all paddocks during the spring flush in order to maintain plants in a vegetative state. Plan the amount of permanent pasture per cow with the decreased production of dry summer weather in mind. Consider using brassicas and stockpiled pasture to extend grazing into early winter.

Large rectangular paddocks subdivided with temporary, portable fencing prove most efficient. With this easily movable fence, graziers create small "breaks" of fresh forage to reward cows after each milking.

◆ **Species balance.** Plant stage when grazing starts, plant height when grazing stops and weather determine regrowth. By favoring grass (taller residual height) or legumes such as clover (shorter residual growth), the grazier can influence the pasture plant balance. Maximizing either forage type will naturally reduce most weed species.

◆ **Water.** For maximum production and pasture utilization, cows need plenty of water, ideally in each paddock. Low-cost, in-pasture watering systems using automatic shut-offs, plastic troughs and plastic pipe fit many situations.

Learning Together

Pasture-User Support Groups provide for effective farmer-to-farmer sharing of new grazing management skills. Members learn from each other about how to switch dairy management to make pasture the primary nutritional input. During the growing season, members take turns hosting monthly farm pasture walks to discuss pasture conditions and herd feeding situations. In Vermont, a pasture adviser visits each farm every three weeks to provide technical assistance.

Forty-five farmers from seven Vermont counties enrolled in such groups in '95. Each paid \$300 for the service, which continues with funds from SARE and the W.K. Kellogg Foundation.

Mike Eastman, Hinesburg, Vt., says members experience hands-on learning that develops sound judgement.

Beyond technique, "Emotional support is important when things get rough," explains Eastman. "There's usually an experienced grazier to talk to who's been through the same thing."

◆ Less pesticide use.

◆ Less soil erosion and ag-generated non-point source phosphorus reaching Lake Champlain.

◆ Less confinement feeding, less manure-handling labor and fewer environmental risks associated with spreading liquid manure on tilled land.

◆ Better use of manure nutrients. Healthy pastures can be regrazed in as little as two weeks after liquid-manure application in spring or midsummer, Vermont graziers report.

Choosing to farm in ways that contrast starkly with conventional practices takes a series of decisions and a clear sense of direction. "I still approach all this as a doubting Thomas," confides Hanson. "You have to pick and choose your information sources, and put time and effort into learning the management."

The Brighams had stiff challenges in converting their herd to successful grazers. The brothers kept on learning because they could see the great potential for profit and improving their lives. "Really, you've got to commit to a whole different attitude," Jack Brigham says. "Then just do it." (*Northeast Region project LNE88-02.*) 🐄

GRASS BRINGS PROFIT

HUTCHISON, Kan.—Kenneth King does fewer calculations to balance rations since a switch to grass-based dairying gradually pulled him out of debt. Micro-managing cow nutrition is just one of the jobs he turned over to his animals by giving them top-quality fresh forage through management-intensive grazing.

From '90 to '95 he doubled herd size, slashed his capital investment by 50 percent, cut his cost per hundredweight in half and allowed his school-aged daughter and son to take over most of the summer milking. He's also converted all his 320 crop acres to pasture and changed to spring-calving, seasonal production with a December-to-February dry period.

"I enjoy farming much more, but there's really not much left for me to do except watch the cows and the grass to see how they can work together even better," he says. Each innovation that works pushes production costs further below the \$6 per hundredweight standard the Kansas farm reached in '94. (That figure does not include dry-cow maintenance.)

In 1985, Kenneth and Judy, his wife, added the dairy enterprise to their grain and alfalfa operation. After several years of carrying \$100,000 debt, they took a course in Holistic Resource Management that changed how they viewed their farm. "We started to look at how to work with nature, how nature worked on *our* farm, and how we could achieve our goals by cutting expenses," says Kenneth.

The more cropland the couple fenced and pastured, the more the cows fed themselves and the more harvesting equipment the Kings sold. To stabilize forage growth in their dry and windy climate, they began searching for well-adapted perennial pasture crops. The Kings wanted to identify species they could direct seed or interplant into alfalfa that also would stand up to intensive grazing.

A SARE/ACE Producer-Initiated Grant helped them buy seed and share results with other farmers. After monitoring a blend of five legumes and seven grasses for more than two years, Kenneth says a mix of common alfalfa and MARTIN endophyte-free fescue is his favorite for feed value and stand durability.

To make better use of their improving pasture, the Kings also:

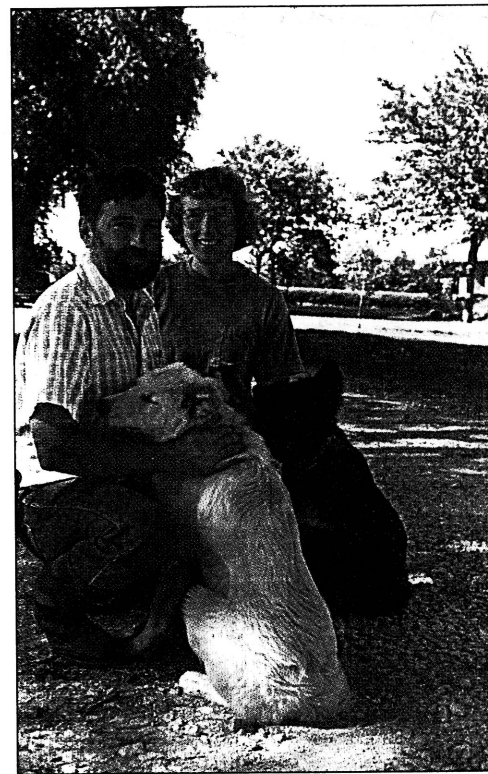
◆ Employ natural, colored-bull breeding to increase grazing vigor and durability of their Holstein genetics, and to maximize breeding efficiency.

◆ Changed their herringbone parlor hardware to eight swingline milkers that handle 60 cows per hour.

◆ Earn income from 120 stocker calves and 50 cow-calf pairs they "lease" from April to July to graze auxiliary paddocks. Later growth is left unharvested in the field, stockpiled for winter grazing.

◆ Try easier ways to feed simpler corn-product and mineral supplements.

King talks to as many farmers as he can. "If I can get people to think for themselves and try something new, I feel like I've been of service." (*North Central project FNC92-8/FNC93-57.*) 🐄



Kenneth and Judy King say intensive grazing management pulled them out of debt and cut milk-production costs in half.

Joan L. Iltas/Kansas Farmer

King embraces creativity and risk-taking as part of his role in the farm's dynamic ecosystem of soil, plants, animals and humans.

Manure Benefits Keep Coming

Dairy manure can help your soil more quickly and for more years than you might expect. In just the second year of liquid-manure applications to fields that hadn't received any previously at the Martin Agricultural Experiment Station in northwestern Tennessee, corn-silage yields approached those of fields receiving an equivalent amount of ammonium nitrate.

Annual manuring increases nutrient availability over time, reducing the need to purchase fertilizer. Regularly manured fields may not need any commercial nitrogen, phosphorus or potassium for many years. At the Dairy Experiment Station in Lewisburg, Tenn., where fields have a 40-year history of manure applications, researchers saw no significant difference in silage yields from plots receiving no N, manure for one or

Regularly manured fields may not need any commercial N, P or K for many years.

two years, or inorganic N fertilizer. "It's surprising how many nutrients are accumulating at the Dairy Station," observes University of Tennessee soil scientist Dr. Michael Mullen.

Applying too much manure can be a threat to water quality, of course, especially in areas of light soil, heavy rainfall or serious erosion. But based on subsurface measurements in plots receiving widely varying amounts of manure at the Tennessee sites, manure-supplied nutrients leach out of topsoil less than you might expect. Cumulative nitrate losses were worrisome only from plots that received an excessive

amount of nitrogen—nearly 450 pounds of total N per acre. That's the equivalent of applying about 90 tons of liquid dairy manure per acre. (Southern Region project LS93-52.)

Nutrient Balance Helps Herd Health

Topdressing alfalfa fields with dairy manure can reduce or even eliminate the need for purchasing some nutrients, without hurting forage yield or quality. At the 100-cow Miner Institute dairy farm in Chazy, N.Y., the staff saved \$1,800 in N, P and K costs by applying 4,500 gallons of liquid dairy manure per acre to 75 acres of established alfalfa fields in 1994. They expect to increase the \$24-per-acre savings to \$32 in 1995 by boosting the manuring rate to 6,000 gallons per acre, with next-to-no nutrient leaching.

If you want to maintain herd health while protecting your soil and water resources, it's important to monitor and balance fertilizer and feed inputs, the whole-farm, nutrient-analysis study at the Miner Institute shows. Take potassium, for example. Although alfalfa requires a significant amount of this nutrient, dairy soils tend to be high in K. Additional potash might not be needed in fields manured each year and potassium may not be needed in mineral mixes, notes Everett Thomas, vice president of agricultural programs at Miner Institute. "There is increasing evidence that excess potassium in feed rations is causing metabolic problems in dairy cattle, especially dry cows," says Thomas.

While regular manuring of fields can build soil phosphorus levels excessively, it might not provide enough nitrogen to

TESTS REDUCE N COSTS

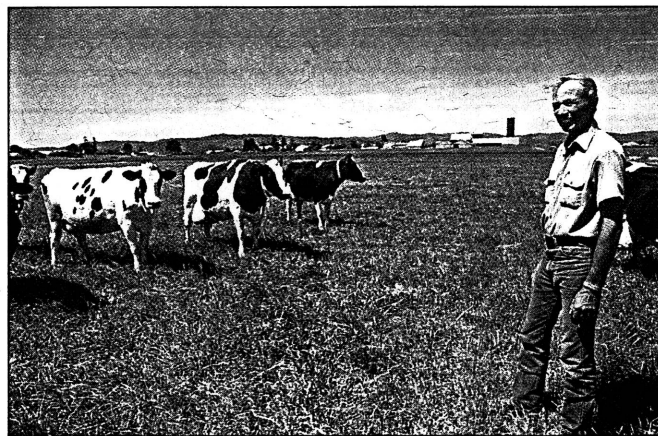
FOREST GROVE, Ore.—It's been three years since Ralph Duyck has sidedressed nitrogen, but his corn-silage yields still average 28 tons to the acre—as high as ever.

Duyck, who farms just west of Portland, was one of the first farmers in his area to use a Pre-Sidedress Nitrate Test (PSNT). The test confirmed his belief that manure and his crop rotation of small grains and clover provided all the fertility his corn needed. "I'd been putting 100 pounds of actual N on for years," Duyck says. "Now I just use a little starter and apply about 50 tons of solid manure per acre."

SARE-supported research at 17 Oregon dairies shows that the late-spring PSNT along with a late-summer, plant-tissue nitrate test can reduce fertilizer costs dramatically. Adapted for Pacific Northwest growing conditions, the tests can help pare fertilizer costs by \$30 to \$70 per acre of silage corn, the data show. These reductions help growers protect groundwater quality.

Farmers who base fertilizer applica-

Geoff Parks



Dairyman Ralph Duyck, Forest Grove, Ore., avoids excess fertilizer use by testing soil nitrates before sidedressing silage corn.

tions on preplant soil tests can't accurately predict the amount of nitrogen that will be available later in the growing season, observes Oregon State University soil scientist Dr. John Hart. By delaying nitrate testing until corn is about 12 inches tall at the center whorl—and warmer soil temperatures have boosted microbiological activity and nitrogen mineralization—you gain a better estimate of how much sidedress N a corn crop actually needs. The study showed that in Oregon, adding nitrogen is usually a waste of money when the nitrate test value is above 25 ppm.

In '94—an early-warming year—a PSNT showed Duyck that his fields had all the nitrate his corn could use. Dairy producers in his area are embracing the test because they've seen firsthand what it can do. "Lots of farmers realize that if they can save some bucks, it can mean survival," he says.

At season's end, the cornstalk nitrate test helps fine-tune fertility management by showing how much nitrate remains unused in the plant. Both tests work well for manured fields as well as ones that receive commercial N.

(Western Region project AW93-11.)

meet all cropping needs. Consider including pre-sidedress nitrate testing in an ongoing nutrient-analysis program, as well as using sustainable cropping methods that minimize erosion and limit runoff. (Northeast Region project ANE93-17.)

Compost Captures Nutrients

Composting leaves and manure together can be a Best Management Practice for nutrient management on dairy farms, a SARE/ACE study in Connecticut shows. This "co-composting" process can save farmers up to \$65,000 compared with installing conventional storage and manure-handling systems, says Denise Conkling, Hartford County SWCD Manager and study coordinator.

Many municipalities and farmers know that composting can turn organic materials such as yard trimmings and dairy manure into valuable fertility. "We found that commercial farmers are well-versed in compost use," says Conkling. What's more, most dairy farmers already have the equipment and resources to produce and spread finished compost, she notes.

As part of a three-year project begun in late 1993, the researchers also are studying the marketability of compost as well as its ability to improve soil. So far, selling compost has not been a highly profitable enterprise for on-farm cooperators in the study. Market standards, competition for organic materials, shipping costs and other factors can pare profits when selling compost. Over time, however, compost applications could reduce farmers' costs for synthetic fertilizer, herbicides and mechanical cultivation, while improving soil and crop quality, the study's early findings suggest. Demonstration plots surprised scientists by yielding higher-quality sweet corn and larger onions the very first year compost was applied. Ongoing trials focus on determining the best application rates for compost. (Northeast Region project ANE92-10.)

Alternative Silage, Grain Crops Show Promise

Tropical corn, hybrid pearl millet and sweet white lupins might help Southern dairy farmers trim their feed purchases. The alternative silage and grain crops could reduce pesticide and fertilizer costs while conserving soil, water and energy resources, early results of a SARE/ACE study at five sites in Alabama, Florida and Georgia suggest.

All of the crops ensile well. Dry-matter yields have ranged from 4.3 tons per acre to a whopping 26.8 tons per acre depending on crop, location and growing conditions (especially rainfall).

Double cropping a winterhardy sweet lupin variety followed by either pearl millet or tropical corn looks particularly appealing, the researchers note. They've been testing a French-bred lupin variety not yet available commercially in the U.S. The legumes can be crushed and fed directly to cattle as a 36-percent-protein feed grain, observes USDA-ARS agronomist Dr. Wayne Reeves, project coordinator. Ensiling the whole

lupin plant, however, allows more time for a summer crop and provides a forage source. In a preliminary study, cows fed lupin silage supplemented with a grain mix had the same feed intake and milk production as cows fed standard corn silage, reports Dr. B.R. Moss, Auburn University dairy nutritionist.

Tropical corn can withstand higher insect pressure than temperate corn and yields well even with late plantings. Pearl millet hybrids, developed by the USDA-ARS breeding program at Tifton, Ga., offer drought tolerance, disease resistance, moderate grain yields (25 to 98 bushels per acre) and good forage potential, even in a short growing window. These high-residue crops also could play a valuable role in conserving soil. (Southern Region project LS93-53.)



Dr. Wayne Reeves

New annual forage crops such as white lupins can help Southern dairy producers cut costs.



Ralph Jurgens

Composted dairy manure cuts costs for almond growers.

CROP FARMERS INCREASE DEMAND FOR COMPOST

TULARE, Calif.—Ralph Jurgens has been composting dairy manure commercially for 20 years, but he's never seen stronger demand.

"In the past five years, acceptance of compost has tripled as crop farmers see better utilization of nutrients, better phosphorus uptake and release, and less disease and insect pressure," says Jurgens. He pays \$3 to \$5.50 per ton (at the farm) for straw-based manure at about 30 percent moisture. Most of his suppliers empty reservoirs twice a year, when he hauls the manure several miles to leased farm sites for carefully monitored composting.

His New Era Farm Service spreads more than 100,000 tons of dairy-manure compost for 600 growers who farm 490,000 acres throughout central California. The firm provides on-farm custom monitoring for another 35,000 tons of compost that dairy producers apply to their own fields.

Much manure still is spread unprocessed, but Jurgens says that over a three-year period, most growers find that 2 tons of compost per year will bring far more benefits to crops than even 5 tons of raw manure. 🐄

Drylot Designs

For information on manure management for feedlot-oriented dairy systems, contact Deanne Morse, Extension specialist in livestock waste management at the University of California-Davis, (916) 752-9391.

'FOREVER APRIL' GRAZING

PELZER, S.C.—Two years into his pasture research project, Tom Trantham is as content as his cows with year-round grazing. He treats an hour spent shepherding the herd as a time to relax and observe—not an hour “lost” from the blur of work he once knew.

In 1988, Trantham was a top-producing dairyman in **South Carolina**. But he also was stressed, miserable and in debt for the previous year's feed. He began grazing his herd out of economic necessity. Cows and fields soon showed new potential, and he quickly increased his reliance on no-tilled annual forages.

“Sure, I felt some jitters when I sold my old silage-harvesting tractor and implements,” Trantham recalls. But grazing has worked well enough—on 46 grazed acres with 80 cows—that during the '95 grazing season he retired another bank note and improved his parlor milking system.

Trantham carefully documents practices to give other Southern dairy producers more information than he had. “With today's low margins, we have to lower the risk of changing systems,” he points out.

He credits SARE/ACE collaborators from Clemson University for much of the success of the “12 Aprils” research, dedicated to providing spring-like, lush pasture every month of the year. “They kept me from cutting corners on record keeping, seed quality and hitting target dates.”

An initial economic study showed Trantham's pasture system cut his feed costs \$6,491 in 1994—56 cents per cow per day. The next study will reflect savings from elimination of fertilizer and herbicides.

Trantham and the Clemson scientists are searching for optimum grazing management methods and times to no-till plant annual forages such as rye, pearl millet, ryegrass, sorghum and clovers. So far, he's learned to:

◆ **Feed the tops.** “The top half of the plant provides more nutrition and milk-making value than the whole plant,” says Trantham from his research. By not feeding the lignin present in the bottom half of forage crops—or in whole-plant silage—he can balance rations using less purchased soybean meal or byproducts.

◆ **Vary the rye.** Planting several varieties stretches the rye grazing window to five or six months. “My rule is to have it grazed before it's knee-high,” says Trantham.

◆ **Maximize millet.** Pearl millet is his most tenacious crop, staying lush from July until first frost.

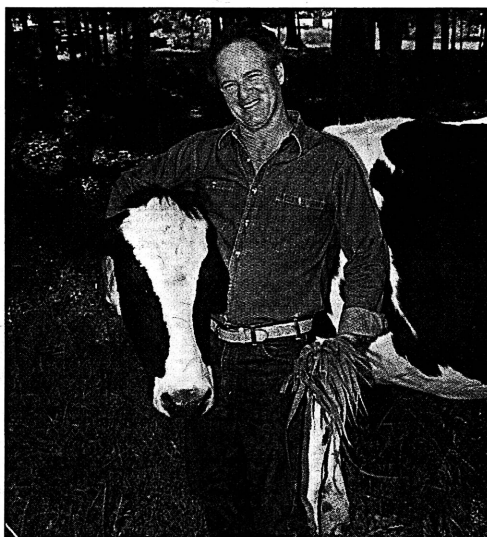
◆ **Plant ahead.** Trantham has to synchronize planting to have enough forage in peak condition for the next quarter's grazing windows. “You plant something today—that the cattle will graze tomorrow—while they're eating what you planted yesterday.”

◆ **Hit the niche.** A mix of ryegrass, rye and YUCCI clover tested 30 percent protein in May '94 and boosted production an average of 11 pounds per cow over good April forage.

◆ **Match the patch.** When milkers start grazing a new paddock, Trantham samples forage so he knows how much concentrate to feed. Amounts vary from 2 to 16 pounds of a 20-percent protein grain blend in a total mixed ration with corn silage. He used to mix up 17 ingredients to achieve the balance that comes now through just forage and the two-part total mixed ration.

“Pasture serves as a platter for the tossed green salad—it's my year-round foundation for farming,” Trantham explains. Sod-covered fields solve his environmental problems, and let him no-till plant when soil is too wet or dry to prepare for seeding with tillage.

“Seven years ago, I felt trapped. Now farming is fun again. I can snatch a smile instead of a tear.” (*Southern Region project LS93-54.*) 🐄



Mark Keever

Converting his herd from confinement feeding to closely managed grazing of annual forages brought back enjoyment and profit for Tom Trantham.

Resources

◆ **ATTRA.** Call (800) 346-9140 to order free sustainable farming packets with topical overviews, contacts and reprints, such as: “**Rotational Grazing Management For Dairy,**” “**Sustainable Dairy Production,**” “**Seasonal Dairying,**” “**Marketing Organic Livestock Products,**” “**Forage-Based Dairy Beef Production,**” “**Dairy Replacement Heifers On Pasture,**” and “**On-Farm Dairy Processing.**”

◆ *Profitable Grazing.* (97 pages,

1995, \$4.95 plus \$2.50 postage and handling from Rodale Institute, 222 Main St., Emmaus PA 18098.) Dairying is prominent in this collection of *New Farm* magazine's best stories on intensive rotational grazing.

◆ **Graze-L,** an electronic mail group of graziers and researchers. To link up, send an e-mail message to listserv@taranaki.ac.nz. In the message, type **SUBSCRIBE Graze-L.**

◆ Cooperative Extension **grazing, dairy and livestock specialists** can

provide technical assistance and locate farmers with grazing expertise.

◆ *The Stockman Grass Farmer.* (P.O. Box 9607, Jackson MS 39286-9909. \$28 per year.) Monthly newspaper on pasture management.

◆ *Greener Pastures On Your Side of the Fence* by Dr. Bill Murphy. (358 pages, 1994, \$24.95 plus \$2.50 postage from Arriba Publishing, 213 Middle Road, Colchester VT 05446.) Thorough, farmer-oriented management of grass, livestock and fencing.

Weary of low milk prices and conventional farm practices, 20 Vermont dairy producers are changing the way they farm and market. They're forming a marketing co-op and receiving SARE/ACE technical assistance in farmer-to-farmer mentoring to help each other convert to organic production. The co-op development supplements a three-year analysis of one conventional and seven transitional and organic Vermont dairies.

Project participants Peter and Bunny Flint, Chelsea, Vt., produce and sell organic milk and cheese from their farm under the name "The Organic Cow of Vermont, Inc." Organic Cow's milk retailed for \$2 to \$2.89 per half-gallon in early '95, supporting payment of at least \$18 per hundredweight to producers.

Gary and Linda Shaneberger, Northfield, Vt., are participants who began shipping to the Flints in early '95. Now, the Shanebergers feel more secure about their dairying future on a small hill farm with 30 registered Ayrshires. Gary says a modest production decrease since converting to organic production and herd-health practices is a fair tradeoff for being able to give customers a premium organic product.

Technical assistance has included an in-barn workshop on homeopathic herd-health care. The strategy is an alternative to antibiotics and satisfies organic certification standards.

In its research area, the SARE/ACE project's producers keep extensive records for whole-farm analyses of the management demands, herd health, economics and environmental impacts of each system.

Conventional dairyman Eric Clifford, Starksboro, Vt., likes the access the eight farm families have to Extension specialists. He appreciates working with organic farmers who have methods and goals very different from his own. "Going to rotational grazing or organic farming is a major change," says Clifford. "We hope the study gives people new information on what's at stake." (*Northeast Region project LNE93-39.*)

Some private, commercial innovations that emphasize farm-fresh, farmer-connected (and rBST-free) milk also are succeeding. Consider:

◆ Middleman Boosts Producer Income

BARTO, Pa.—The nine family farms in eastern Pennsylvania that supply Longacre Modern Dairy got a big-city boost in January '95 from a New Jersey dairy distributor. Valley Ridge Farms Inc., of Garfield, N.J., delivers the dairy's fluid milk to homes in **New York City** and northern **New Jersey**.

The milk and value-added Longacre products marketed by Valley Ridge increase farmer profit at no additional marketing or distribution cost to the small processor, which pays premium prices to its producers.

◆ Add Value On The Farm

ANCRAMDAL, N.Y.—Ronnybrook Farm Dairy supports three families who process and market milk from just 80 Holsteins. Brothers Ronald and Sid Osofsky cut their herd back from 350 cows and began on-farm processing in '91 with partner Steven James. They've created a high-end market niche for their unhomogenized milk in glass bottles, and for their skim, homogenized and flavored milks.

To bring their milk to market, the group mastered skills



Bob Gerheart/Rodale Stock Images

Effective packaging shows off Ronnybrook Farm Dairy's "Creamline" unhomogenized milk and the gentle Jerseys of The Organic Cow of Vermont, Inc.

in processing, consumer satisfaction and employee safety. Less perishable products such as butter and crème fraîche (a gourmet sour cream) increase distribution efficiency. "It's satisfying to see people appreciate the milk you helped to make, from the crops in the field to putting it in the bottle," says processing manager Sid Osofsky.

◆ Great Milk Warrants Great Marketing

WHITING, Vt.—After nearly two years of sometimes fierce fighting for shelf space and name recognition for their premium fluid milk, the farmers who control Vermont Milk Producers Inc. are getting the respect they deserve—and the volume they need to succeed as owner-operators.

"The good news is that we're self-sufficient financially, and we're seeing steady sales growth," says Steven Judge, farmer and VMPI general manager. Twenty farmers met strict standards for milk taste and purity, sustainable farming practices and humane livestock techniques in spring '95 when VMPI was selling about 12,500 half-gallon units per week.

Farmgate price was 50 cents over blend, with incentive premiums for butterfat and lower cell counts. Loyal customers pay about \$1.79 per half gallon for whole, 1 percent or skim milks in upscale supermarkets and small groceries throughout **New England**.

Steady, moderate market growth points to more profit for VMPI producers once the company pays off its start-up debt. "We're building equity by investing in a high-quality product that has more potential for long-range success than commodity milk," Judge explains.

"We blazed a trail that's been more difficult and taken longer than we planned," says Judge. "But it's been worth it. Farmers own the company, and we control how our products are marketed." 🐄

QUICK PROFIT FROM PASTURE

Converting to pasture-based production can match or exceed conventional dairy returns *en during transition*, a comparison of 16 family dairy farms in Wisconsin and Minnesota shows. Besides cutting inputs, results from these farms show that putting cows on pasture can reduce overhead, improve work schedules and quality of life, and protect natural resources.

Funded by the EPA's ACE program, the study compared eight pasture-based dairies with eight confinement dairies during '91 and '92. Pasture pioneers at the time, the grass farmers had been using rotational grazing for an average of just three years, observes Marv Kamp, the project's coordinator at the Wisconsin Rural Development Center.

All 16 farmers were chosen from a group of 45 who had begun in '89 using reduced-input strategies such as herbicide banding, nitrogen crediting and mechanical cultivation. Impressed by the benefits of rotational grazing, these farmers sought even deeper cuts in input costs and were willing to sacrifice some milk production if it increased profits, adds Kamp.

The pasture-based herds produced an average of 3,300 pounds less milk per cow than the confinement herds (15,300 vs. 18,600), but yielded a net cash return of 46 cents *more* per hundredweight, the economic analysis shows. The grass farmers saved an average of nearly \$24 per acre in out-of-pocket costs by cutting row-crop acreage and using more of their land for pasture. Their purchased grain costs were 17 cents higher per hundredweight, but reduced use of pesticides,



Jess Ennis/WRDC

Portable fencing helps Rebecca Garvoille, Spring Green, Wis., move cows through well-managed pasture.

fertilizer, seed and custom work resulted in overall crop and feed costs that were 21 cents less per hundredweight.

Lower cash costs for other dairy inputs (supplies, vet and breeding, utilities, overhead and miscellaneous) saved another 28 cents per hundredweight. Accounting for fixed costs and calf and cull sales contributed the balance of the savings. The environmental benefit of reduced row-cropping is a bonus.

The economics aren't all that encouraging for financially squeezed family dairy farms, however, Kamp cautions. The grass dairies netted an average of just \$11,183 per year during the study. Pasture-based dairying could be more sustainable with improved pasture production, added rotational grazing experience, efficient milking facilities, equitable milk prices, seasonal dairying, less investment in equipment and buildings, and better loan rates, he believes.

But grazing gives you more flexibility, says Kamp. It makes it easier to expand a herd, pasture-based dairy operators found. "You're less tied to interest rates and the cost of equipment such as combines," he notes. "One thing study participants kept telling me is 'We have to lower our debt load.'"

For a free copy of the results, request *At The Crossroads: An Economic Comparison of Grass-Based and Confinement Dairying in Wisconsin*, available from the Wisconsin Rural Development Center, 1406 Hwy. 18/151 E., Mount Horeb WI 53572. (North Central Region project LNC88-12/ANC92-10.)

	Pasture	Confinement
	—\$/cwt. equivalent—	
Income	\$12.40	\$12.44
Costs		
Feed	3.48	3.69
Other Cash	2.85	3.13
Fixed	4.88	4.89
Total Costs	<u>\$11.21</u>	<u>\$11.71</u>
Net Return	\$1.19	\$0.73

For more information...

To learn more about a research project, contact the appropriate region.

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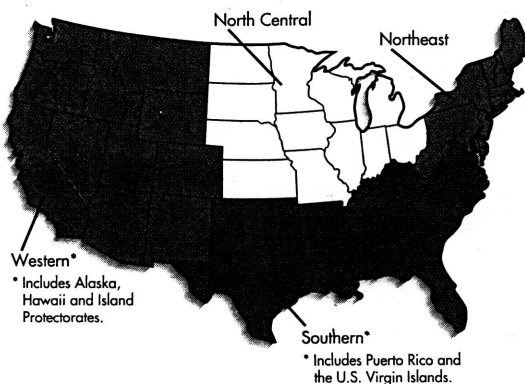
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SARE/ACE Regions



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Southern*
* Includes Puerto Rico and the U.S. Virgin Islands.