



AG INNOVATION NEWS

The newspaper of the Agricultural Utilization Research Institute

INSIDE:



Woolly mattresses

PAGE 3



Soy nuts

PAGE 13



Hooked on lamb

PAGE 10

**SPECIAL FOCUS
STARTS ON PAGE 4:**

determined to dairy

AURI's balancing act

BY EDGAR OLSON

In every aspect of life — from managing time to eating — maintaining balance among competing priorities is key to attaining our goals. At AURI, we strive to strike a balance between serving individual producers and business clients and exploring opportunities that impact entire agricultural sectors.

During the past year, AURI staff have been involved in more than 140 projects, providing technical assistance, feasibility testing, product development and technology transfer. We've also provided critical needs assessments, marketing assistance and resource connections for our client businesses. These services make AURI unique.

But we do not simply wait for projects or ideas to come by. AURI takes the lead on examining opportunities that can have a broad-ranging impact on agricultural industries and producers.

For example, AURI recently presented results of our meat processing survey and census to the Minnesota Association of Meat Processors. This study not only examined the industry's current status but future potential.

We held a series of grower meetings on oilseed processing possibilities. While Minnesota is the country's third highest soybean producer, our processing capacity lags behind many other states. The oilseed industry analysis found places where grower-led efforts could mean higher value for their crops.

Other broad-impact initiatives include forming an ethanol task force with representatives from all the state's ethanol plants, commodity groups and state agencies. We've looked at producing ethanol from small grains like wheat and barley, we've investigated soy-based biodiesel, and we've been a long-time participant in hybrid poplar research.

Just as working with individual clients is important, so too is the identification of emerging opportunities that can impact a large number of producers. It's all a part of finding the right balance for rural economic success.



OLSON.



Milestones

Redwood Candle Company has expanded for the second time in its brief, two-year history, completing a 12,000 square-foot building expansion in December. The company's 33 employees make soot-free, soy oil-based candles that are sold in about 1,000 retail stores. Owner Jill Anderson says she is continually picking up more stores across the country.

The Lamb Shoppe of rural Hutchinson now offers Jersey beef, chicken, turkeys and eggs, as well as lamb products raised without pesticides, herbicides and antibiotics. Connie Karsten's on-farm operation includes a USDA meat processing facility and a retail store, which features meat products, wool blankets and gift items.

A 30,000 square-foot hog processing facility under construction in Dawson, Minn. is expected to open in July. **Prairie Farmers Cooperative** is acquiring equipment for the producer-owned plant and the Minnesota Job Skills Partnership has granted funds for employee training.



AURI news

Timmerman joins AURI

Marshall, Minn. — In January, Dennis Timmerman joined the AURI staff in Marshall as project development director for value-added animal products. The operator of a corn, soybean and hog farmer near Boyd, Minn., Timmerman is experienced in value-added production as a founding member of the Prairie Farmers Cooperative. The 71-member hog producer co-op is building a processing plant near Dawson.

"What Denny brings to the organization is first-hand knowledge of project development and business," says Edgar Olson, AURI executive director. "I'm a believer in developing value-added opportunities for Minnesota producers," Timmerman says. "I enjoy helping producers find a market for what they raise."

Timmerman will provide statewide assistance to projects that involve livestock and animal products. He replaces Steve Olson who left AURI to head the Minnesota Turkey Growers Association.

Timmerman will provide statewide assistance to projects that involve livestock and animal products. He replaces Steve Olson who left AURI to head the Minnesota Turkey Growers Association.

Timmerman will provide statewide assistance to projects that involve livestock and animal products. He replaces Steve Olson who left AURI to head the Minnesota Turkey Growers Association.

Meat workshops offered

Marshall, Minn. — AURI is offering two meaty workshops this spring. A meat processing two-day

Minnesota Certified Pork, a Central Minnesota pork producer cooperative, is the first to receive production certification under the new Minnesota Certified program, managed by the state agriculture department. Co-op producers keep detailed records to verify compliance with quality standards in food safety, farm management and stewardship. Also, MNCEP pork can be traced to the farm where it was produced. The certification was signed by State Agriculture Commissioner Gene Hugoson in late January.

Papa George Meats of Stillwater, Minn. has introduced three new pork products to complement lamb products already on the market. Papa George's 12-ounce pork patty rolls, in regular, sage and hot flavors, are carried by Cub Foods, Lunds, Byerly's and Kowalski's in the Twin Cities metro area. Owner George Ghanem says his pork contains 55 percent less fat than regular pork sausage. ■

short course will provide instruction on sausage making, smokehouse operations, nutrition labeling and other meat science-related topics. The workshop will be held April 25 and 26 at AURI's meat laboratory on the Southwest State University campus in Marshall, Minn.

A two-day Hazard Analysis Critical Control Point (HACCP) workshop will be held May 9 and 10 at the Holiday Inn Express in St. Cloud, Minn. It will offer instruction on identifying and eliminating potential food safety hazards in the meat preparation process.

To register for either workshop, call Louise Eischens at AURI's Marshall office, phone (507) 537-7440.

AURI hosts FFA competition

Marshall, Minn. — On March 7, more than 30 Minnesota FFA members showed off their food skills at the AURI-hosted Food Science and Technology competition at Southwest State University.

Eight teams competed in sensory evaluation, food safety awareness, and replied to a customer complaint letter. Each team designed a food product, complete with nutritional analysis, labeling and a marketing plan.

The Dassel-Cokato team won and will move on to a national competition in Louisville, Kentucky. Other chapters competing were Jackson, Belle Plaine, Benson, New Prague, Medford, Stillwater and Chaska. ■



TIMMERMAN.

ABOUT AG INNOVATION NEWS

Cindy Green, managing editor
Charles Smith-Dewey, designer
Deborah Hoeldtke, editing services
Rolf Hagberg, photography

Published by the Agricultural Utilization Research Institute (AURI) to inform the food, agriculture and business communities and the general public about developments in new ag-based products.



For information on AURI, call 1-800-279-5010 or visit our Web site: www.auri.org



Trademark of American Soybean Association

Address correspondence or free subscription requests to:
Dan Lemke, Communications Director
Ag Innovation News
P.O. Box 251
Waseca, MN 56093
Telephone: (507) 835-8990
dlemke@auri.org

A nonprofit corporation created to strengthen rural Minnesota's economy, AURI helps businesses respond to market opportunities with new and value-added uses for agricultural goods. The Institute builds working partnerships with business innovators, agricultural groups and researchers, and provides technical support to clients conducting new product research and development.

Following is a brief overview of AURI services. For more information, contact the office nearest you.

An Initial Project Assessment helps determine the technical and market feasibility of an ag-based product or technology. Applicants must demonstrate their projects will impact the use of traditional or alternative crops and livestock. The IPA program is designed to add value to agricultural commodities and foster long-term economic growth.

The Market Assessment Program identifies new or alternative market opportunities that add value to Minnesota farm commodities and benefit the state's producers. MAP is open to farm organizations, commodity groups, grower associations, agribusiness groups, public entities, nonprofit organizations and/or producer groups and is specifically designed for projects where a business or research partner is not yet involved in commercialization.

The Technology Transfer program identifies and develops value-added technologies and helps move technology from public and private entities to Minnesota businesses. Applicants must demonstrate the technology will impact commodity use.

The Pesticide Reduction Options program funds research and demonstration projects intended to reduce the use of petroleum-based products in farm production.

AURI's Applied Research Services complement technical and financial assistance. The Institute's research staff works with agribusinesses, university scientists, federal labs and commodity groups to access new technology and link it to commercial partners.

AURI also operates several **laboratories and pilot plants** that support innovative, ag-based product development. With staff expertise and commercial-grade equipment, the facilities offer a full range of services, from ingredient analysis to test production runs.

Facilities include:

- Pilot Plant and Product Development Kitchen, Crookston
- Waste Utilization Laboratory, Waseca
- Fats and Oils Laboratory, Marshall
- Meat Laboratory, Marshall

AURI Field Offices

Northern Office
Michael Sparby or Lane Loeslie
P.O. Box 599
Crookston, MN 56716-0599
1-800-279-5010

Central Office
Michael Sparby or Jody Koubsky
P.O. Box 188
Morris, MN 56267-0188
(320) 589-7280

Southwest Office
Dennis Timmerman or Nancy Larson
1501 State Street
Marshall, MN 56258
(507) 537-7440

Southeast Office
Lisa Gjersvik or Mardell Jacobson
P.O. Box 251
Waseca, MN 56093-0251
(507) 835-8990

For e-mail addresses, visit AURI on the Web at: www.auri.org

For a man with a passion for wool, mattresses are his High Pointe

BY JENNIFER PENA

Harmony, Minn. — Forty years ago, Lloyd Peterson visited a neighbor's auction and met his fate. "She showed me this mattress made of wool, which was over 100 years old.

"I ended up buying it, and put it out on our hammock outside. We abused that thing as much as we could, left it out in the rain and snow and used it the next year. It was great. After that I wanted to make wool mattresses myself."

Peterson's 40-year dream has awoken a new product for his company, High Pointe Coverings. High Pointe made some of its first wool mattresses in early September of last year and began selling them in December.

No comparison

High Pointe Coverings' mattresses and pillows are made with wool from all over the United States, although the company would like more wool from Minnesota. Each mattress uses 34 to 35 pounds — seven layers of pure, carded wool that are 4 to 5 inches thick. "There is no comparison to synthetic mattresses and pillows," Peterson says. "Wool is an entity of its own."

A sturdy material to sleep on, warm in winter and cool in summer, wool also has some proven health benefits, Peterson says. It eases back and neck aches, and soothes the effects of arthritis. "My wife has rheumatoid arthritis and she has to have a wool mattress. We won't use anything but wool," Peterson says.

Pricing is another story. Checking the current market, Peterson found retailers claiming to have wool mattresses only layered about two inches of wool on top of regular synthetic fabric mattresses, for which they charged much more than he expected. "One salesperson told me a mattress with just a couple inches of wool on top was \$2,299. My mattresses are selling for about a fifth of that," he says. "It's amazing."

Mattress tours

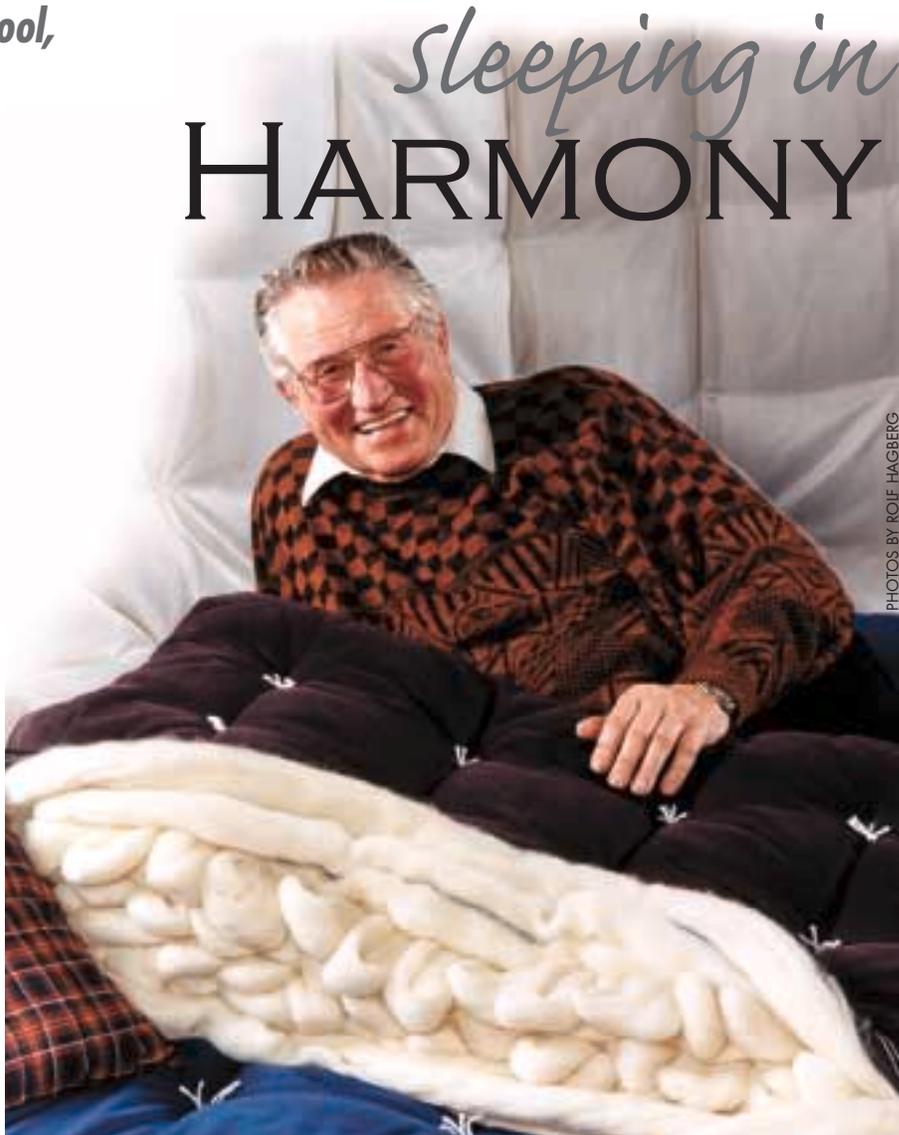
Sales have been encouraging. "We had a great Christmas," Peterson says. "Business is picking up again since the holidays."



High Pointe Coverings employees arrange seven layers of 4 to 5 inch-thick pure, carded wool, using 34 to 35 pounds of wool per mattress.

Trade shows also spur sales, and the company's Web site is running with a built-in order form. Those interested can also tour the factory in Harmony. "We like that," Peterson says with a smile. "We're getting a group from Iowa who heard about us to come for a tour next week."

Although wool mattresses are not new, "having them manufactured in Minnesota is unique. ... We're hoping this will be an opportunity to utilize more Minnesota wool," says Lisa



PHOTOS BY ROIF HAGBERG

Entrepreneur Lloyd Peterson was so impressed by the comfortable, durable century-old wool mattress he bought 40 years ago that he decided to make his own. His company, High Pointe Coverings in Harmony, Minn., started manufacturing wool mattresses and pillows last fall.

Gjersvik, AURI project director in Waseca. "Comparing the low value of raw wool and the premium price these mattresses sell for, the value added to the wool is considerable."

AURI got involved when High Pointe needed to get the word out. "AURI helped with ideas on our brochure and Web site. The staff has given lots of support all the way with ideas and positive enthusiasm," Peterson says. Dan Lemke, communications director, helped design marketing materials for trade shows.

Plans for a wool boot, wheelchair pads and quilts are in the works, and High Pointe would like to use "native wool" (Minnesota-grown) in the near future. Smaller travel-size mattresses are also an option for campers, travelers and truckers. "I want everyone to have a wool pillow or mattress," says Peterson — who still has a piece of that 140-year old mattress in his camper. ■

For more information, contact Lloyd Peterson at (507) 886-2864 or 1-888-886-7696, or visit www.natureswool.com.

Determined to dairy



It isn't easy being a dairy farmer these days. With low milk prices, brought on by production increases, consolidation and a federal pricing system unfavorable to Upper Midwest producers, small dairy farms are struggling to stay in business. Minnesota and Wisconsin no longer lead the nation's milk production — California does, and other western and southern states are gaining.

Still, dairy is Minnesota's largest agriculture sector, with 7,500-plus producers feeding millions into our state's economy every year. Dairy farmers are a stubborn bunch. Some are determined to control their destiny by bottling and processing their own milk, cheese, butter and ice cream. They want to take advantage of the substantial price difference between raw milk and retail dairy products.

AURI recently co-sponsored feasibility studies on producer-owned dairy processing operations, from on-farm bottling to cooperative-run creameries that have worked in population-dense regions. Studies show prospects are dim — the current milk processing distribution system is too well established for small newcomers to enter easily. However, there are niches in natural food markets for producers willing to work long hours in a high-risk, shoestring venture.

AURI does not advocate or discourage any particular approach to dairy farming. Rather, we present here a look at producers' challenges and attempts by some to sustain their operations with unconventional dairy marketing schemes.

Bottle at your own risk

Interest in farmstead milk processing is growing, but two AURI studies advise producers to be cautious.

BY E. M. MORRISON

You probably paid about \$1.85 for that half gallon of milk in your refrigerator. What portion of the retail price went to the farmer?

Not much.

The farmgate value of your milk is about 35 percent of the retail, according to the U.S. Department of Agriculture. And the gap between what farmers get and consumers pay is growing wider. "When producers look at the price for raw milk, compared to prices for retail milk, it's discouraging for them," says Lane Loeslie, AURI program specialist in Crookston.

That farm-to-retail price spread is one reason Minnesota dairy farmers are showing interest in new processing ventures, especially farmstead bottling, says Michael Sparby, AURI project director in Morris. "We've had many recent inquiries from growers who want to do on-farm processing."

To help farmers understand the opportunities and risks of these ventures, AURI organized two studies. The research examines the retail dairy market and assesses the economic feasibility of farmstead bottling. AURI officials

and other ag leaders also toured several East Coast "mini-dairy" plants, gathering information on behalf of Minnesota farmers.

Their conclusions? "We're advising caution," Loeslie says.

Retail bottled up?

An AURI- and Small Business Development-sponsored study in 1999 for Agassiz Valley Dairy Cooperative advised against competing head-to-head with established suppliers in the price-sensitive fluid milk market.

Agassiz Valley Co-op, a group of 25 milk producers in Otter Tail and Becker counties, was looking for value-added opportunities, says Karl Hanson of Perham, co-op secretary-treasurer. Before moving into fluid milk processing,



growers asked for accurate information about dairy product consumption trends, wholesale and retail distribution channels, retail slotting and promotional fees, local demand for specialty milk products such as organic, and interest by retailers in private-label processing contracts.

The market study, conducted by Strategic Performance Group of Minneapolis, surveyed 157 groceries, restaurants and institutions in central Minnesota. The survey found high satisfaction with current dairy suppliers and products and warned that consolidation in the food industry "makes it more challenging to gain access to accounts at the local level."

About a third of retailers expressed interest in dairy products bearing their store's private label. However, private label products generally sell at a discount, forcing lower processor margins.

Four large dairy companies dominate the Minnesota market, along with several smaller ones. The study concluded that "competing on price against well-established (milk suppliers) will lead to price concessions and marginal profitability."

Hanson says the study caused Agassiz Valley to shelve the idea of building a processing plant, which would have required a capital investment of at least \$1.5 million. "The guys weren't willing to put their equity on the line." The co-op is now attempting to win a collective supply agreement with an established milk processor.

Again, be careful

Another AURI-sponsored study in farmstead bottling found similar obstacles to competing in the fluid milk sector.

Designed by David Hoff, a University of Minnesota-Crookston agricultural business professor, the study was carried out last fall by ag marketing management students. "The purpose was to identify economic and market barriers to on-farm milk processing," Sparby says. "We wanted to know if it is economically feasible to overcome these barriers."

Confirming the Agassiz Valley study, the Crookston study found that the biggest hurdle for independent bottlers is market penetration.

"The fluid milk market is highly concentrated," Hoff wrote in the study's executive summary. "The major players have an established distribution system in place with recognized and respected brand names. They have established themselves as reliable suppliers. Furthermore, they are more likely to be in business for many years into the future, something a new venture will find places them at a disadvantage when seeking retail outlets."

Independent milk processors are also likely to face a growing array of retail slotting fees,

BOTTLING STUDY TO PAGE 12

Pasturing for profit



PHOTOS BY ROIF HAGBERG

Dan and Muriel French are among six Rochester-area producers who graze small herds of dairy cows and have formed a cooperative to market their own PastureLand brand of cheese and milk.

Two Minnesota co-ops are betting that dairy products from pasture-fed cows will be the next niche

BY E. M. MORRISON

At least two Minnesota farm co-ops think the milk money's greener on the pasture side of the fence. Whole Farm Cooperative in central Minnesota and PastureLand Cooperative in southeast Minnesota are marketing cheese, butter, milk and ice cream made from the milk of grass-fed cows.

Whole Farm Cooperative, a group of about 30

farmers who market together, has sold Grazer's Cheese since 1998. The group also sells beef, poultry, vegetables, eggs, grain and other produce directly to consumers through



PastureLand cheese, processed under contract by Eichten Cheese of Center City, Minn., is made from the milk of grass-fed cows raised without growth hormones or antibiotics.

Twins Cities churches.

The co-op targets consumers who share Whole Farm's ideals: sustainable production methods, land stewardship and small, diversified family operations.

Two years ago, AURI helped the group add cheese to its product line. Co-op members Kevin and Brad Donnay make six varieties of premium cheese for Whole Farm at their farmstead dairy plant near Kimball. Whole Farm sells about 500 pounds of Grazer's Cheese a month, says Herman Hendrickson of Little Sauk, the co-op's volunteer cheese consultant and chief cheerleader.

Grazer's milk coming

Having established a direct market for their cheese, co-op members are preparing to introduce Whole Farm "Grazer's Milk" to their customer base. Fluid milk is "one tough market," acknowledges Hendrickson, a retired Kraft Foods executive renowned locally for his love of

buttermilk and milk — just about the only beverages he drinks. "There's a short window of time to get your milk sold. But our dairy grazers want to try."

The co-op will bottle at Pride of Main Street Dairy in Sauk Centre, one of Minnesota's few remaining independent creameries. Pride of Main Street, which produces kefir, a fermented milk, will also make premium ice cream for Whole Farm. "We'll be using the butterfat in our ice cream," Hendrickson says. "So we'll end up with a lot of skim milk, which we'll have to find a market for."

Grazer's Milk will sell for about 10 percent more than standard retail, making the brand competitive with other specialty milk, such as probiotic and organic, Hendrickson says. "We price from the bottom up. We calculate the return our producers want and add production, processing, and distribution costs to arrive at the customer price."

Whole Farm dairy producers hope direct marketing will boost their returns on milk to \$18 per hundredweight. That's about 50 percent higher than current average prices, which have fallen to historic lows.

Access the main concern

It wasn't just low milk prices that prompted members of a Rochester-area cooperative to create their own brand of cheese and butter.

It was mainly fear they would have no place to sell their raw milk.

"We all have low-cost operations," says Dan French of Dodge Center, president of PastureLand Cooperative, a group of six southeast Minnesota milk producers who use intensive rotational grazing. "We can produce milk as competitively as anybody, as far as price. For us, future market access was the biggest driver."

The co-op's members manage small dairy herds, ranging from 65 cows to 165. As small, seasonal producers, "we are concerned about being locked out of the market," French says. Those fears are heightened by consolidation throughout the dairy food chain and by regional shifts that are pushing the dairy industry west and south.

Their own label

PastureLand growers had been meeting informally for several years to talk about finding new outlets for their milk.

They also wanted to get more value from the distinctive qualities of their milk. Grass-fed cows produce milk with high levels of certain nutrients, including Omega-3 fatty acids, beta carotene and conjugated linoleic acid, French says. There's evidence these nutrients have important health benefits, he says, but their value is lost in commodity marketing channels.

Growers decided on marketing their own

PASTURELAND TO PAGE 6

The milk-fed economy

Could Minnesota's dairy powerhouse run out of juice? A state expert offers ideas for revitalizing the industry.

BY E. M. MORRISON

It's a three-billion-dollar economic engine, and it runs on milk.

Minnesota's dairy industry is the state's largest agriculture sector, employing more Minnesotans than 3M, Target and Northwest Airlines combined. The industry adds \$600 million to the value of the state's corn and soybean crops every year. And for every 1,000 cows that farmers milk, they pump \$2.6 million into local communities.

But many of the state's 7,500-plus dairy farms are in trouble, threatened by milk-market oversupplies, inequitable federal price formulas, high production costs and competition from western producers and processors, says Michael Sparby, AURI project director in Morris.

Shrinking in the middle of oversupply

Minnesota and Wisconsin once dominated U.S. milk production. But over the last decade, the dairy industry has moved west. California — now the nation's top milk producer — and other western states are rapidly expanding in dairy. Idaho will soon overtake Minnesota as the fifth leading dairy state.

PASTURELAND FROM PAGE 5

brand to preserve those qualities. In 1999, with help from AURI and the Minnesota Department of Agriculture's Co-op Development Program, French's group formed a marketing cooperative to sell grass-based dairy products under the PastureLand brand.

What matters most

Last spring, Eichten Cheese of Center City, Minn., began processing cheddar and gouda for the co-op. Members sold the cheese at the Rochester Farmers Market, moving 1,500 pounds the first season. Though labor intensive, selling at the Farmers Market was a good way to test consumer response, French says. "We were trying to see what people were interested in."

"Our milk production is flat," says Harold Stanislawski of Fergus Falls, Minn., a dairy specialist for the Minnesota Department of Agriculture. "California and Idaho are predominantly where the growth is."

Minnesota lags in adopting larger, more cost-effective dairy farms. The state's aging dairy plants are also less efficient than those of western competitors, Stanislawski says. "Our largest plant processes three million pounds of milk a day." New plants in western states have a capacity of four to eight million pounds.

Greater efficiencies in milk production and processing mean "there is cheese now being produced in California and delivered to our markets in the Midwest for four to five cents less per pound than we can do it here."

Meanwhile, 29 months of consecutive growth in production have boosted national milk supplies 1.5 percent above demand. That's pushed raw milk prices to the lowest level in two decades, Stanislawski says. "Prices now are below the cost of production for many Minnesota dairy farmers."

Also weighing on Minnesota dairy farmers are unfavorable federal price formulas. These formulas, which set minimum prices, vary by region and are intended to encourage more milk production in population-dense regions — penalizing producers in Wisconsin and Minnesota. Only 19 percent of Minnesota milk is sold for drinking; 80 percent is made into cheese, which yields less profit for farmers.

Time for a turnaround

Yet the outlook is not all doom and gloom, Stanislawski says. He points to four areas that could help spur a turnaround for Minnesota dairy: planning, regulation amendments, financing and federal price reform.

"We need to help farmers do a better job of planning for change," Stanislawski says. He

What mattered most to consumers?

"Taste and quality," French says. "We found that if we could get people to taste our cheese, our rate of sales was very high."

Buying a locally made product was important to consumers, too, the co-op learned. "People want to know who they're buying food from," French says.

Customers also responded to PastureLand ideals — sustainable farming practices, environmental stewardship and humane treatment of animals. "To our customers, it's important that their food comes from cattle in the pasture, not confined."

Some responses were surprising. PastureLand growers don't use antibiotics or bovine growth hormone. "That was important to consumers," French says, "but not as important as we thought it would be. Taste and locale were bigger."

"Prices now are below the cost of production for many Minnesota dairy farmers."

— Harold Stanislawski



notes that Wisconsin has had success with dairy planning grants. "For every \$1 spent on planning, they've gotten \$168 back in new dairy investments."

Minnesota dairy farmers would also benefit from increased diagnostic services to identify limits on productivity, he says. And better benchmarking methods would let farmers compare their performance with competitors across the country.

Minnesota should lower public policy barriers that discourage dairy production in the state, Stanislawski adds. "We've had a hard time in Minnesota with the permitting process."

Better financing mechanisms would help the industry, he says. Cash-strapped farmers "are at a disadvantage when it comes to upgrading to increase efficiency and improve quality." He points out that in California, where dairy ventures are better capitalized, interest expense averages 30 cents a hundredweight less than in Minnesota.

Finally, there must be national dairy price-formula reform. "The federal government

treats our dairymen as third class citizens, and that's not fair."

AURI exerts

AURI is a part of the effort to strengthen Minnesota dairy, Sparby says. For example, AURI is participating in a study with the state agriculture department to calculate the costs and benefits of new feedlot rules. The research will examine "the economic costs of losing dairy farmers and the subsequent effects on the state's dairy processing," he says.

AURI continues to help dairy entrepreneurs with business and market planning — an essential component of success, says Bob Lefebvre, executive director of the Minnesota Milk Producers Association. "Dairy producers are looking at options to increase revenues, and adding value is one way to do that.

"But you don't want to just jump into a new venture. You have to make sure you have a well-researched and thought-out plan. That's where AURI comes in. It's one of the places that can help producers." ■

Retailing footholds

At the Farmers Market, PastureLand developed a core of regular customers. That helped the group place cheeses in several Rochester-area food co-ops and HyVee stores. By working with local grocers, the co-op avoided paying steep up-front "slotting" or shelf fees, which often doom start-up food companies.

Last fall, PastureLand added butter; premium ice cream is in the works. And the co-op is exploring the fluid milk market. "But it's much more risky," French says, "more price competitive, more perishable. And we would need a hefty amount to interest a processor." PastureLand looked at doing its own bottling, French adds, "but we've ruled it out for now. It's too heavy an investment in money and manpower."

PastureLand growers hope their marketing

strategy will earn the equivalent of \$17.50 per hundredweight of milk — about 35 percent more than average farmgate milk prices in 2000.

The PastureLand brand faces plenty of obstacles, acknowledges French, a former IBM draftsman who has been farming for 20 years. But the group believes demand for grass-fed dairy products will rise. French points to an explosion of organic milk sales, which jumped 73 percent between 1996 and 1997, and continue to grow at about 20 percent a year, according to a 1999 AURI market study.

"Organic milk is a good niche now," French says. "But we think there's going to be a lot of competition there soon. So we're looking beyond organic to the next niche." ■

Bittersweet end



PHOTOS BY ROLF HAGBERG & KAY MITHAUGEN

For seven years, Dick and Pam Bowne marketed their own brand of Gemini Guernsey Old Fashioned Creamline Milk and set up a bottling operation on their Aitkin County farm. But in March, they said good-bye to their Guernsey cows, 80-hour work weeks and the relentlessly competitive milk market; Gemini Guernsey milk will now be processed by Pride of Main Street Dairy in Sauk Centre, Minn.

Years of hard work and high hopes ended when Pam and Dick Bowne pulled the plug on their milk production and processing business.

BY E.M. MORRISON

Palisade, Minn. — Pam and Dick Bowne poured seven years of their lives into Gemini Guernsey Old Fashioned Creamline Milk.

They milked 50 Guernsey cows on their Aitkin County farm, processed milk in their farmstead bottling plant, distributed it to Twin Cities stores and homes, and did all their own promotions, marketing and sales.

In March — short on money, exhausted from years of 80-hour work weeks, facing new licensing requirements and shrinking margins — the Bownes called it quits. The cows are gone and the bottling plant is closed.

But the product they launched with hope and nurtured with passion will continue. Pride of Main Street Dairy, an independent creamery in Sauk Centre, will take over production of Gemini Guernsey creamline milk.

Distribution to be expanded

Pride of Main Street co-owner George Economy sees a bright future for the Gemini brand. Creamline milk, which is pasteurized but not homogenized, fits well with other specialty products: organic milk and ice cream, grazer's cheese, milk shakes, smoothies and the company's signature product, Helios Nutrition Organic Kefir. "I think there will be strong interest in old-fashioned milk," he says.

Pride of Main Street, with marketing networks in 49-states, expects to increase Gemini sales and distribution — something Dick and Pam lacked the manpower to do.

Economy says the Bownes built a loyal following because of their "commitment to their customers and sustainable agriculture." Saturdays, they would load up their refrigerated milk truck and drive 150 miles south to the Twin Cities, where they spent weekends making deliveries. Frequently, their accounts would sell out in two or three days, "and then they'd be out of stock until the next

week," Economy says.

Pride of Main Street, distributing through Promised Land Organic Farms of Zimmerman, Minn., "can guarantee regular and more frequent deliveries," Economy says.

The Bownes have been friends with Economy for years and will continue to promote the brand they founded. "But we're going off in a different direction," Dick says. While they may go back to raising beef cattle, selling their beloved milk cows and handing off their hard-fought venture was a bittersweet end.

Starting Gemini Guernsey

The Bownes have been farmers all their lives. Dick, 57, grew up on a beef farm near the Columbia Gorge in Washington state. Pam, 53, grew up on a farm near Moberge, S. D. The couple began farming in 1975, raising cattle and grain.

In the early 1990s, they quit grain farming, put their land into pasture, and concentrated on milking Guernsey cows. To boost revenues from their small herd, the Bownes turned to direct marketing. They worked with AURI and North Branch Dairy to reintroduce creamline milk.

The Bownes worked hard to distinguish

Gemini Guernsey milk from other brands, promoting its freshness, taste and the farm-to-table link. Over the next four years, volume grew steadily until they were trucking all their milk to North Branch Dairy for custom processing.

But in 1998, North Branch closed. The Bownes had an available building on their farm, so they bought North Branch's processing equipment, lock, stock and barrel, for \$35,000.

Problems and delays

They expected to set up their bottling plant in a few weeks, which stretched into six months.

"We set it up on a shoestring," Dick says, acknowledging that their big bargain came with headaches. They couldn't get replacement parts, for example, so Dick had to design new parts. The farm's electrical service was incompatible with the used equipment. "There was so much stuff to do," Dick recalls. Delays mounted.

Meanwhile, they couldn't supply their milk accounts.

Late in 1998, the Bownes received their farmstead-processing license and were back in business. Despite a six-month absence, Dick says they quickly regained all their commercial customers.

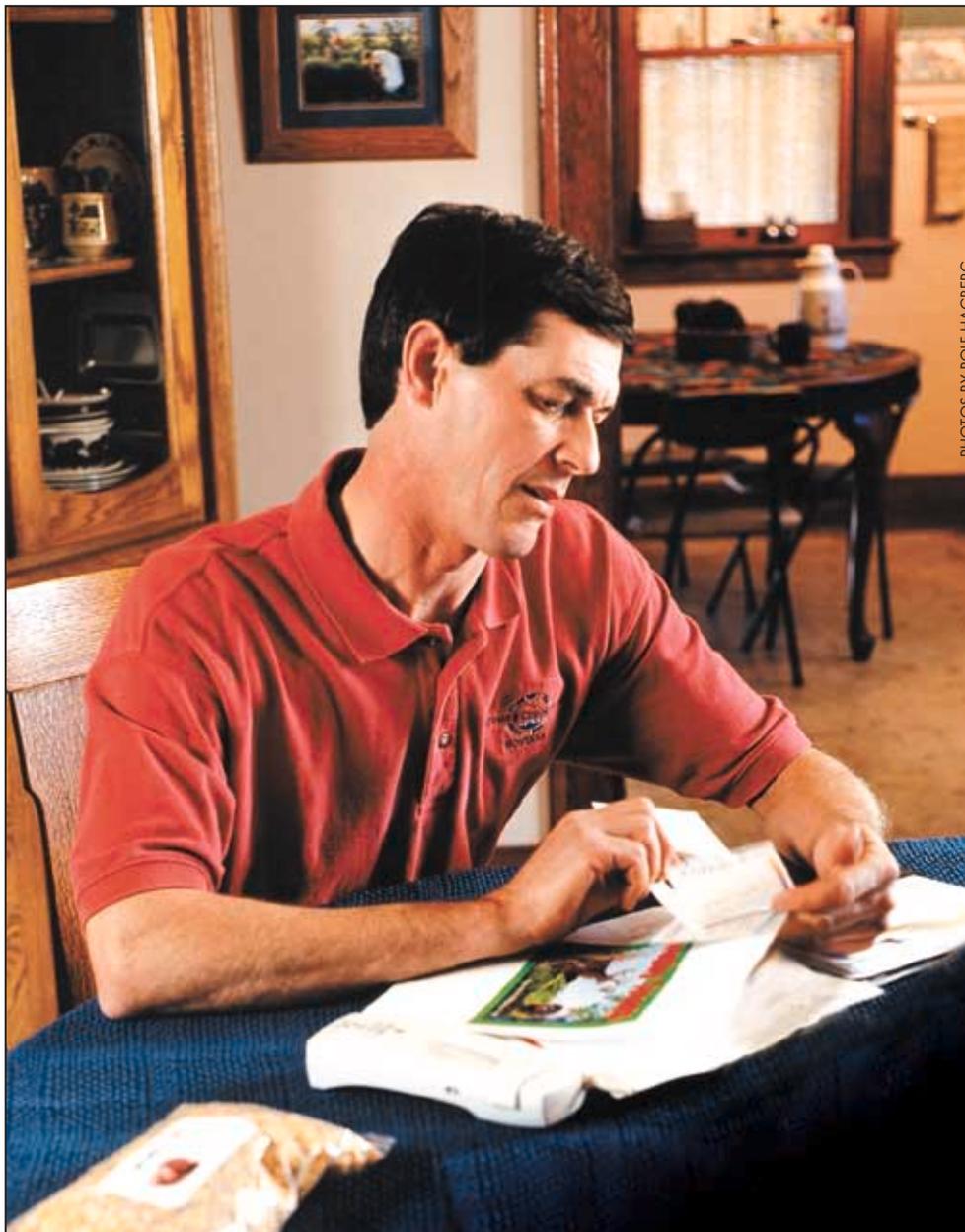
But the extremely competitive retail milk market prevented them from raising prices. As long as Dick and Pam and their two daughters did everything, their venture paid the bills, Dick says. Finally, "the work got to be overwhelming." Still, Pam adds, "we don't regret what we did. Even though we didn't continue, what we learned can help somebody else."

A cautionary tale

The Gemini Guernsey story is not unusual among new small businesses, which are often stretched to the breaking point by lack of capital and labor, says Michael Sparby, AURI project director in Morris. "If you break it down, the Bownes were really running four separate businesses themselves: milk production, milk processing, product distribution and marketing."

The Bownes' story also illustrates the relentlessly competitive pressures in the fluid milk market, which operates on high volume and low margins, Sparby says. "It's another reason why we are stressing caution." ■





PHOTOS BY ROFIE HAGBERG

Editor's note: This is the second installment in a four-part series following one year in the life of Bruce Tiffany, an entrepreneurial farmer and repair shop owner preparing to market his family's brand of wildlife treats. Now that he has perfected a blend of agricultural commodities, pelletized with AURI's help, Tiffany is ready to package and test-market his new product.

The life and times of an
ENTREPRENEUR
PART TWO OF
A FOUR-PART
SERIES

BY CINDY GREEN

Redwood Falls, Minn. — It was Autumn when Bruce Tiffany gazed out at the old granary in his backyard. Though time and weather had turned its once bright red face a wrinkled grey, he didn't see a building that had lost its usefulness — nor did he see it transformed into a lake cabin, as his wife envisioned. Instead, Tiffany saw conveyors and baggers filling the old storage shed with bags of wildlife treats.

A half-year later, he's realizing his dream under the trade name Tiffany Family Farms.

He's preparing to bag and test-market wildlife treats, intended to lure wild game to hunting grounds or to backyards for viewing and photography. The treats are made from a proprietary blend of crop and food processing ingredients.

For a 43-year-old repair shop owner who also manages a highly-diversified 1,500-acre farm, the venture is another stubborn move to self-sufficiency. "If you don't take any initiative to improve your lot in life or affect the outcome, then you really don't deserve the rewards," Tiffany says.

With the help of AURI's Al Doering at the Waseca pilot plant, Tiffany spent months pelletizing feed formulations for testing on wild deer. In the meantime, he learned his treats are palatable to wild turkey and possibly bear.

Now that he has a demonstrated product, the real hunt is about to begin — capturing a market niche. Tiffany doesn't want to approach retailers empty-handed. So before engaging in a full-scale marketing study, he's gearing up to bag and label packages of his trademarked Trophy Treats and Nature Treats for a retail show and tell.

Working out of his rural Redwood Falls home, Bruce Tiffany is preparing labels for sample bags of wildlife treats, which he recently started packaging in a converted granary.

Show and tell time for



After experimenting with color and design, Bruce Tiffany has settled on a label for Trophy Treats™, targeted to hunters pursuing wild turkey or “the big buck.”

“I know some people who will research things to death and never go with it. I’m on the other side — I’ll just try it and see what happens.”

No mental pictures

“I want something I can put in (retailers’) hands so I’m not having to make promises or draw mental pictures,” Tiffany says. “I want to make sure I can deliver on my word, first of all. The most important thing is that your buyers can read that what they think they’re buying is what they buy.”

To make test packages, Tiffany has set up an on-farm processing plant on a slim budget. “I don’t want to incur a huge debt to make this thing work. ... I’ve learned some lessons in farming.”

That’s where the old granary comes in handy. Tiffany’s torn out interior walls, wired, and added a blender, scale and ingredient bin. He designed some of his own equipment, including the bagger, and scrounged for used equipment. “Come to think of it, I haven’t bought anything new,” Tiffany says. “I don’t know if that is exactly the way to go, but I want my investments to pay off fast.”

Bagging wildlife treats sounds simple but requires many problem-solving steps — size, seal, shelf-life, nutritional label, logo design, price — to get to the final package. “I want the product to be seen, so that limits the kind of bag I can use,” Tiffany says. His clear plastic bag requires a clear heat seal, adding cost. Trophy Treats™ will be packaged in 10- and 40- pound bags and Nature Treats™ in two and five-pound bags.

Tiffany reduced his product’s moisture content enough to ensure at least nine months’ shelf life. “One of the ingredients has natural antioxidants and preserving qualities,” so he doesn’t have to use artificial preservatives that wildlife might detect. “Wildlife have the ability to smell and taste things we can’t. We don’t want to have any mold or off-odors or things that might deter them.”

Pretty packages for people

While he’s confident the treats will be palatable to deer, turkeys and bear, it’s humans he must attract with the package. For label design, the do-it-yourselfer took in an outsider — a professional graphics designer. “I recognize where my strengths and weaknesses are,” Tiffany says, although “I might think my weaknesses are my strengths and muddle into it anyway.”

Tiffany and his wife Ann “have had debates on what we want on the label. I want the label to tell the story — yet I’ve been told you’ve got one or two seconds to form an opinion.” He settled on a cleaned-up version of a collage of images he put together — a deer, a turkey, a farm setting.

“Our major debate is how bright to make the colors,” particularly whether to use a yellow-green or forest green with red lettering. “One thought is it’s got to be bright enough to catch someone’s eye — another opinion is you can’t make it gaudy. ... But if you open the kitchen cupboard, some of the most recognizable brand names have the worst color combinations.”

Some label information is required, such as net weight, usage instructions and ingredients. Since the product is a treat rather than a complete feed, only a limited list of nutritional qualities is necessary. Labeling requirements vary by state and country, however, so Tiffany has to ensure he complies in his target market region, including Canada.

The final issue to settle before test marketing is price — tricky because Tiffany’s production costs are tentative. He doesn’t want to invest in a large inventory before assuring a market, “but buying small quantities of bags and labels gets expensive — the per unit price is outrageous. It makes it difficult to estimate what the retail price should be.”

Market expectations

Tiffany expects many marketing questions to be answered once he’s in the sporting goods retailer’s door. “We’re going to smaller, independent retailers — the ones with entrepreneurial spirit — because I think they will help us and offer advice. If I find that retailers are saying no, I’m willing to change. If we strike out with one, we’ll learn something — if you strike out with the big guys you’re out.”

“I enjoy the sales process. You go in and find out what you can help them with — and that in turn will help you,” Tiffany says. “I find it exciting because to me, each and every one is a challenge — and I thrive on challenge.”

Time, on the other hand, is his biggest frustration. “When you’re asking other

people to send supplies, samples and do some of the work for you, it just takes longer than you think it should. Everybody has prioritized their time.”

“You get weekends and holidays and before you know it another month flies by,” Tiffany says. “You can’t give up your day job, so I know come spring planting season that allocating my time and making it all happen is going to be difficult. I also have the repair business; I’ve said ‘no’ to some things, but I pretty much keep doing what I’ve done and sandwich this in.”

“We want to grow this business but I don’t know how big. I don’t have any expectations on volume. I don’t think all the big guys envisioned where they’d be, and some who thought they’d take the world over found out differently.”

Tiffany is focusing on his new business venture day by day. “The first major success is going to be the first order we get, and after that, how much success we have, I don’t know — that’s not in my thought process right now.” ■

“If you don’t take any initiative to improve your lot in life ... then you really don’t deserve the rewards.”



If you missed the first installment of this series, you can read it on our Web site at: <http://www.auri.org/news/ainjan01/08page.htm>

Tiffany wildlife treats



PHOTOS BY ROLF HAGBERG

Hooked on lamb

Country Meadow Farms forms rapidly to take advantage of 'natural' markets

BY CINDY GREEN

Forest Lake, Minn. — “A bad joke that got way out of control” is how Todd Marek describes his foray into sheep farming.

Four years ago, on a tongue-in-cheek suggestion from his brother-in-law, Marek purchased two pet sheep to trim his seven-acre yard. One ewe led to another, and now Marek has 40 ewes that produce more than 80 marketable lambs annually.

Last November, his erstwhile hobby led to the creation of Country Meadow Farms Cooperative. Its five producer-members sell fresh lamb year-round to Twin Cities food cooperatives such as the Wedge, Linden Hills and Mississippi Market, and they're catching the attention of larger food chains.

Everything's sheep-shape

When Marek, a pre-fabricated farm building salesman, purchased land near Forest Lake to build a home, a few old farm sheds came with the deal, but not enough to set up a lambing operation. So he turned a silage pit into a barn by adding a domed canopy and furnishing it with salvaged equipment — fencing, gates, weight scales, feeding troughs, cabinets — even old doors turned into walls and partitions.

Though crude, his operation is well organized, with a large area for ewes, small pens for birthing and early feeding, and a large pen for ewes with growing lambs. When he steps in the pen, the ewes crowd near him for a kind word and ear scratching. He greets

each by name — Serena, Missy, Sabrena. With sad resignation, he pets old Gertrude, one of his original ewes, who is anemic from post-natal hemorrhaging. “I'm afraid she's just hanging on long enough to nurse her lamb,” he says.

Most of Marek's ewes have twins but three this season had triplets. He bottle-feeds a half-dozen — those whose dams have died or are too old to nurse. Pregnant ewes and newborn lambs require close attention, Marek says. Because his ewes give birth during winter, he keeps a baby monitor in the barn and plans to install a video monitor so he can keep an eye on them from his home office, a short walk away.

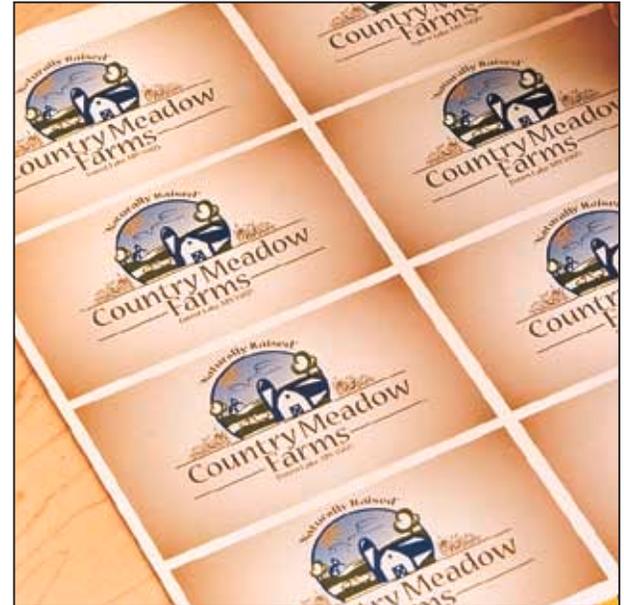
Hobby farm in a hurry

A year after he bought his first two sheep, Marek's six-year-old daughter Paige showed their purebred Montadale sheep at the Iowa State Fair. She was nervous and “even a little teary,” he says. “But of a class of 30, we ended up ninth and were as happy as could be.” Then she won a reserve champion at the Minnesota State Fair and kept on winning, from the Red River Valley Fair to the Washington County Fair.

Hooked on sheep farming, Marek “bought a couple more, then a couple more, then a bunch more.” Within two years he was selling lambs direct to consumers at \$1.25 per pound live weight. He arranged cutting and packaging for his customers at a small meat



Todd Marek of Forest Lake, Minn., instigated formation of the Country Meadow Farms cooperative, with five producer-members who cooperate on breeding and feeding schedules to produce marketable lamb year round.



plant in Amery, Wis., for a final cost to the consumer of about \$3.33 per pound.

As production increased, Marek sold lambs to the stockyards, which he quickly realized wouldn't pay the bills. "It took me only a year to figure out that I couldn't make it on 20 to 30 dollars of profit per animal," Marek says. "If what you're doing isn't making money, you have to revamp. ... It takes time, but I can sell fewer animals and make money."

"I think people get stuck in a paradigm and don't look at the big picture. They're just happy to take their lambs to South St. Paul because that's what they've always done. ... It's a shame because a lot of these little guys aren't filling a niche and there are niches to be filled."

A woman from Cambridge, Minn. inspired him with her pork mobile. "I see her frequently on weekends. She's in the parking lot selling pork right out of the back of her truck. She's getting a good price and customers are getting a quality product."

Last fall, Marek's direct sales to Twin Cities' grocers became so successful that "I oversold our supply. ... I needed to get a lot of lamb quick."

Plan ready, market set ... go

Rather than buy lambs to fill his order, Marek jump-started a cooperative with the help of a Minnesota Department of Agriculture development program. He approached a veterinarian/sheep producer in Dresser, Wis., producers from Buffalo and South Haven, Minn., and a retired University of Minnesota geneticist living in New Brighton,

Minn. who boards sheep on Marek's farm. Within a month, "we drew up a business plan and were ready to go."

Although he says he's the greenest member on lamb knowledge, Marek's 15 years of sales experience landed him the chief marketer role. "None of the other farmers have the time or know-how to market the product, so it works out real well," he says.

AURI provided funding for professionally-designed labels, packaging and marketing materials that reinforce the lamb's natural, wholesome image. Using in-store demonstrations and point-of-purchase displays, Country Meadow appeals to customers who want locally raised meat without hormones, growth steroids or antibiotics.

The co-op's primary cuts are leg roasts, shoulder roasts, steaks, loin chops and racks. "We really push the easy summer-time grilling items," Marek says. "What (stores) don't sell fresh, they grind and freeze as patties or lamb sausage. All stores want more grind than I can give them. The Wedge buys 60 pounds per week."

Lamb cycle evens supply

One benefit of group marketing is that it allows producers to stagger breeding times. Marek lambs winter through spring, for example. Another co-op member breeds half her ewes to lamb in the spring and half in the fall, and a third member lambs year-round.

Gestation takes about five months, and lambs reach market weight in about six months; any older than 12 months must be sold as mutton rather than lamb.

"We're getting breeds in here that are known for out-of-season breeding — Dorset, Finn and Polypae," Marek says. He prefers white-faced Montadales, which "lamb easily and their mothering is super. Black-face sheep have bigger carcasses, but lambing is more difficult."

Controlling the speed lambs grow to market weight (100 to 125 pounds) is another way to even out supply. The more grain lambs eat, the faster they gain weight, while pasturing and forage will slow down the gain. "We don't want 50 to come to weight at the same time." To maintain natural production methods, the producers use information and scheduling, not drugs. "In feedlot situations, they're often pumped full of steroids to get bigger faster," Marek says.

The co-op buys lambs from its members, paying five cents per pound more than market price. "Plus we pick up at the farm and pay immediately," Marek says.

"The co-op is willing to break with tradition to adjust to market demands," says Michael Sparby, AURI project director in Morris. "They've identified a niche market. ... Market studies show that, while most lamb is imported, there is a market for fresh, locally produced lamb."

Up against New Zealand

Most lamb sold in the United States comes from New Zealand and Australia, but Marek says once consumers get a taste of American lamb, they will prefer it. "New Zealand lamb has a distinct flavor because there's a certain type of clover that comprises most of the grazing ground; it gives an 'off' flavor to the meat. Our lamb has a completely different

taste — a lot of chefs prefer it."

"The downside is we're not consistent and (imports) have that up on us. In New Zealand, they've developed breeds over hundreds of years and sell a uniform variety," Marek says. "When they ship over 10,000 pounds of loin chops, every chop is almost identical. Chefs like that."

The United States has many breed variations and high feed costs, while South Pacific producers can graze 12 months out of the year. "They can raise their lamb, ship it over and sell it cheaper than I can produce it," Marek says.

Still, he's banking on the advantages of fresh over frozen. He points to a major natural food chain interested in Country Meadow lamb, but "they buy 400 pounds per week and we can't supply that right now," Marek says. "We haven't come full circle with our breeding programs — we're figuring out what we're getting back per retail cut from one lamb versus another. We're laying low for a month or two until we get everything worked out."

"We have to keep looking ahead and broadening our product line. We're starting to sell to some restaurants now — like Zanders Cafe in St. Paul. And we're always trying to come up with more products."

"They have the members and expertise to make things go," Sparby says. "And Todd (Marek) has enough drive to carry it out." ■

LAMB RECIPE
next page

Grease monkeys for science

Scientists want to cut biodiesel costs with recycled fats

BY DAN LEMKE

Marshall, Minn. — Gathering buckets of greasy, grimy waste oils from restaurants is no glamorous task, but Rose Patzer does it for science. And economics: her slimy collection is helping reduce the cost of biodiesel fuel.

During the past year, Patzer, a process chemist at AURI's fats and oils lab in Marshall, has retrieved waste greases from local eateries, converted them to methyl esters, and blended them with soy methyl esters to achieve a reduced-cost biodiesel fuel blend.

Costs less, works in the cold

Biodiesel, generally made from renewable soybean oil, is an alternative fuel with huge potential. Generally blended with petroleum

diesel, biodiesel has been shown to reduce emissions and increase fuel lubricity, which means less wear and tear on engines. It also represents a potentially massive market for soy oil.

But cost remains a barrier to large-scale market entry. To give biodiesel a boost, Patzer is blending methyl esters from both recycled grease and soybean oil to cut production costs.

"Biodiesel made from recycled grease costs about seven and a half cents a pound," Patzer says. "Soybean oil will convert more readily than recycled grease and has a lower gel point. Mixing the two gives us a blend that has the properties we want at a lower cost."

"The goal of this project is to come up with a cheaper biodiesel that handles the cold," says Ken Bickel of the University of Minnesota Center for Diesel Research. Bickel is conducting lab tests on the waste grease blend in a Caterpillar 3116 engine.

A workable mix for engine testing turns out to be a "B20" blend containing 10 percent yellow

grease methyl esters (yellow grease is waste grease that has been cleaned), 10 percent soy methyl esters and 80 percent petroleum diesel.

Bickel will run three tests at the diesel research center using straight diesel and three with the B20 blend. He'll measure carbon monoxide, hydrocarbon and particulate emissions. And he'll observe any changes in engine power resulting from the alternative fuel.

On the road again

After engine tests are complete, road tests will begin. Hennepin County previously participated in a road study using biodiesel in several highway maintenance vehicles to evaluate the fuel's power, storage and handling qualities in cold weather. Bickel says the study will continue utilizing the waste grease blended fuel.

Many eyes will be scrutinizing the test results. The recycled grease project was funded by the Legislative Commission on Minnesota Resources and represents collaboration with AURI, the Minnesota Soybean Research and Promotion Council, the Center for Diesel

Research and the Minnesota Department of Agriculture.

"With the cost of petroleum diesel going up and the utilization of waste grease esters bringing the price of biodiesel down, the cost margin is getting a lot more narrow for B20," Patzer says. "Now is a good time to push for market entry." ■



AURI chemist Rose Patzer is blending methyl esters from waste grease and soybean oil to make a reduced-cost biodiesel fuel.

A few openings exist

BOTTLING STUDY FROM PAGE 4

promotional costs, demonstration allowances and store rebates for unsold product, the study revealed. At the same time, "It is unlikely that a small bottler will be able to become a low-cost competitor."

Specialty dairy products offer the best opportunities for independents, the Crookston study found. But established processors are already moving aggressively to fill and promote those niches. "This makes it increasingly difficult for the small processor to gain comparative advantage."

In summary, Hoff says: "There are very limited opportunities in fluid bottling."

Openings for a few

Still, that doesn't mean there are no opportunities for small, independent milk processors, says Kai Bjerkness of AURI in St. Paul.

Last November, Bjerkness joined Minnesota Commissioner of Agriculture Gene Hugoson and other state ag leaders on a tour of farmstead creameries in Pennsylvania and Virginia. "We were interested in how these mini-dairies operate, and the results they've had."

Bjerkness toured three mini-dairies, all established within the last year. The dairies are processing from 2,500 to more than 8,000 pounds of milk a week, producing milk, yogurt, cheese and ice cream.

All the mini-dairies are located in high-traffic areas, Bjerkness says, and are serving specialty markets. "You can't make it competing with big players that operate on

thin margins and high volume. It has to be a niche."

The largest plant, located on a 200-head dairy and vegetable farm in the Chesapeake corridor, supplies milk, cheese and ice cream for the farm's retail store. The dairy products augment a successful vegetable and bakery business, Bjerkness says. "They already had a strong market established for produce."

Another creamery, run by a 28-member Amish cooperative, makes kosher yogurt for the New York and New Jersey markets. Although demand for kosher dairy food is strong, marketing has been expensive, Bjerkness says. And the co-op's access to retail shelf space has been hindered by missteps in package design, he adds.

A third cooperative dairy, which also operates a farm store, reported that finding retail vendors was a problem. "Service issues were cited as the primary reasons," Bjerkness says.

It's the m-word

It's still too early to judge the financial success of these ventures, which required capital investments of \$750,000 to \$1.2 million, says Minnesota Milk Producers Association Executive Director Bob Lefebvre, who also toured the East Coast dairies.

Lefebvre, whose organization represents 3,200 Minnesota dairy farmers, believes farmstead dairy processing "may work for a few producers. It's obviously not the answer for all."

Bjerkness agrees: "You have to ask questions first: Do you have the financing? ... the location? ... And what is your market?"

"Market," he adds, "that's the beginning and the end." ■

LAMB RECIPE

Pikes Peak Barbecued Lamb Use only American lamb

- 2 lamb leg steaks, 1" thick
- 2 tsp. olive oil
- 1/4 cup minced onion
- 1/4 cup minced green pepper
- 3/4 cup chili sauce
- 1/4 cup orange juice or orange liqueur
- 2 T. brown sugar, packed
- 2 tsp. grated orange peel
- 5 drops red pepper sauce

Heat olive oil in a small pan. Sauté onion and pepper for 2 to 3 minutes, stirring occasionally. Blend in chili sauce, orange juice or liqueur, orange peel and red pepper sauce. Cover and simmer for 10 minutes. Makes 1-3/4 cups sauce.

After brushing with sauce, grill steaks 4" from coals for 5 minutes. Turn, brush with sauce and grill an additional 5 minutes. Turn, brush with sauce and cook 2 to 3 minutes longer for medium rare or until desired doneness. Cut steaks into thirds and serve.

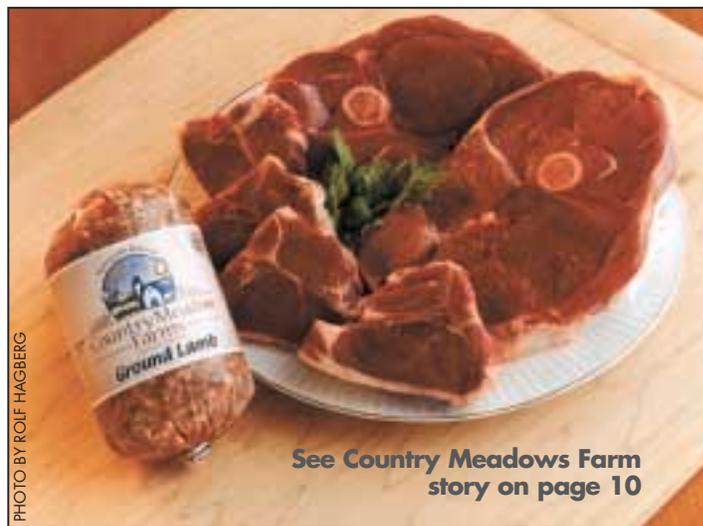


PHOTO BY ROIF HAGBERG

See Country Meadows Farm story on page 10

Preserving more than identity

Northern Minnesota's Earthwise builds a future on vertical integration and specialty processing

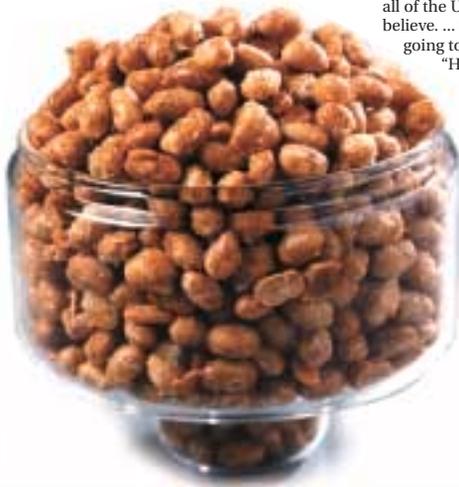
BY GREG BOOTH

Crookston, Minn. — Robin Brekken grows his farm by concepts rather than acres.

For now, a small retail package of roasted soy nuts is the most tangible manifestation of those concepts, but the package points to a larger vision — the world market for organic and identity-preserved grain. With his partners in Earthwise Foods and Earthwise Processors, Brekken is placing his bet on the future of identity-preserved, non-GMO and organic crops.

"It's no secret that commodity prices kind of stink," Brekken says. "My farm was big into sugar beets, and the economies of that business have tailed off in the last few years." Instead of expanding his 3,000 acre farm to 5,000 or 6,000 acres — an option he once viewed as necessary just to keep up financially — Brekken sees Earthwise as a way to improve his family's quality of life while farming the same acreage.

"My farm is in transition to be organic, which will happen next summer," he says. "It's not all about money, either. I'm not necessarily a full-fledged tree hugger, but I don't miss all the spraying and chemicals. ... Health was not a main factor, but it was a small one."



PRODUCT PHOTOS BY ROLF HAGBERG

Preserving identity

While Earthwise Foods markets roasted soybean snacks under their own brand, the recent purchase of the former Busch Agricultural Resources plant in Moorhead, Minn. allows Earthwise Processors to handle soybeans, organic popcorn, flax, wheat and other grains in identity-preserved lots.

The partners plan to continue retailing their own products, but they also see a niche in supplying identity-preserved beans, flour and other ingredients for big-time buyers, according to Moorhead investor and organic farmer Lynn Brakke. With few big elevators able to supply identity-preserved, contamination-free ag products, Brakke believes Earthwise is in the right place at the right time.

"Identity-preserved is going to be virtually all of the U.S. production eventually, I believe. ... Commodity-based agriculture is going to be Third World," Brakke says.

"Here in the United States, it's going to be value-added. The average elevator is not equipped to handle it."

The growing demand for non-GMO crops will help Earthwise business, Brakke adds. "No GMO crops will go through the facility, because of (the potential for) contamination."

With recently adopted federal guidelines for organic crops, Earthwise can only stand to benefit, adds Michael Sparby, AURI project director in Morris. Its standards are "above and beyond the USDA organic standards. The rest of the industry is catching up to what Earthwise is doing."



PHOTO BY GREG BOOTH

Moorhead investor and organic farmer Lynn Brakke has partnered with several producers to market Earthwise Foods soybean snacks in four flavors. Earthwise Processors are expanding into other products made from identity-preserved, non-GMO grains since purchasing the former Busch plant in Moorhead, Minn.

Snacks big on coasts

Earthwise Foods markets four soybean snack flavors: roasted no-salt, roasted and salted, barbecue and honey-roasted. Ranch and hot-and-spicy flavors will be added soon, according to partner Curt Petrich of Crookston, Minn.

Packaged at Dahlgren's in Crookston, most product is shipped to the East and West coasts, but the company is actively pursuing markets in Europe and Australia.

"This market has a potential to grow a lot," Petrich says. "It's similar to the sunflower industry. It can hold its own. A company that wants to focus on a single commodity may do well with the soybean."

Earthwise snacks have received "excellent response" at retail stores and trade shows, Petrich adds. "We have 12 to 15 medium to large customers (retailers), and we just picked up our first distributor." The soybean

snacks are popular in health food stores and vending machines, and Earthwise's packaging and quality have been "very well accepted. ... We don't take a back seat to anybody in the quality of our product or packaging."

Beating the competition

Earthwise soy snacks' success to date has been "better than expectations and projections, Sparby says. He and AURI's Lane Loeslie helped Earthwise partners tap marketing expert Jack LaMont, who helped grow Captain Ken's line of baked beans and chili. "LaMont continues to work closely with them," Loeslie says. "It's a good match-up." AURI food scientist Charan Wadhawan provided technical assistance and helped Earthwise Foods comply with labeling regulations.

SOYNUITS TO PAGE 15

Elsewhere in ag utilization

BY JOAN OLSON

Editor's note: As a service to our readers, we provide news about the work of others in the ag utilization arena. Often, research done elsewhere complements AURI's work. Please note that ARS is the research arm of the USDA.

Corn waxing waterproof

ARS scientists have found an inexpensive way to use a corn protein called zein to "wax" paper. It's an environmentally friendly coating that can be used on any packaging material that requires waterproofing.

Source: *Soybean Digest*, December 2000.

Rats 'n raspberries

Feeding cancer-induced rats 5 to 10 percent freeze-dried raspberries in their diet over a 36-week study reduced the development of colon tumors by 50 percent and esophageal cancer by nearly 70 percent. Human trials are the next step.

Source: Gary Stoner, *Ohio State University James Cancer Hospital*, (614) 293-3713, stoner.21@osu.edu.

Adopt a lamb

The New York Times describes an adoption program created by a shepherd's co-op in a mountainous, medieval village in central Italy. Sheep lovers can select their pick of the merino flock over the Internet. A \$154 contract entitles adoptive "parents" to a photograph, adoption papers and a year's supply of their chosen one's wool and fresh cheese. The less sentimental can also receive their pet as lamb chops. The co-op hopes to keep 2000-year-old sheep herding traditions from dying out in the area.

Source: *New York Times*, November 18, 2000, www.nytimes.com/2000/11/18/technology.

Hammering out a tourist trade

In America and abroad, agritourism — vacationing in rural and natural areas — is on the increase. I-FARRM, an Illinois rural revitalization effort, sees these tourists as a new kind of cash crop.

Southern Illinois University's Rural Development Opportunities team helps individuals develop business plans for agritourism. It recently helped a couple with an existing bed-and-breakfast and antique shop develop a plan to add a smithy. The smithy will showcase the history of smithery,

offer training for blacksmiths, and create a sales outlet for the goods hammered out by the smiths.

Source: Margaret "Maggie" R. Flanagan, (618) 453-3247, email: cdmaggie@siu.edu.

Big-bass farmers

Hybrid striped bass could tip the scales for Illinois fish farmers angling for profit. "There is great demand for the fingerlings and fry, particularly in Asia, where this is considered to be a health fish," says Christopher C. Kohler, who heads Southern Illinois University-Carbondale's Fisheries and Illinois Aquaculture Center.

Closer to home, Kohler predicts the mild, white-fleshed hybrid could contend with salmon for fine-dining dollars, especially in upscale eateries where chefs present the whole fish.

A cross between white and striped bass, hybrid striped bass grow faster, resist disease and are easier to feed than either of the parent species. The hybrid bass sell for about \$2.50 per pound as opposed to 80 cents a pound for catfish.

Illinois' new fish co-op, scheduled to be up and running next fall, will process and sell bass, giving the state's producers a marketing advantage.

Source: Sue Davis at (618) 453-2276, <http://news.siu.edu/news/October00/102400k0170.html>.

Soy built it

The Ohio Soybean Council and the United Soybean Board unveiled "The House that Soy Built" last year at the Farm Science Review in London, Ohio. A new soy-based wood adhesive keeps the structure together. Soybean-based products are displayed and explained throughout the house, now a permanent exhibit at the Farm Science Review.

Source: *The Land*, January 19, 2001.



Slick and stick

USDA researchers have combined cornstarch and soy oil to make a product with a broad range of farm, food and industrial uses. Fantesk, the starch-oil composite, is being tested as a seed coating and as a fat replacer in puddings, ice cream, baked goods, cheese and yogurt. Fantesk can also be used to

deliver fragrances for a prolonged period.

Patented by George Fanta and the late Kenneth Eskins of the National Center for Agricultural Utilization Research, Fantesk can be made from any starch and any oil or fat.

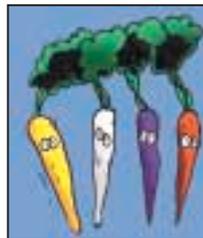
Source: *Soybean Digest*, December 2000.

Carrots of color

The familiar orange carrot has long been credited with preventing night blindness; now a USDA researcher says carrots of other hues might help prevent cancer and heart disease. Philipp Simon, a plant breeder and geneticist at the University of Wisconsin-Madison, is studying purple, red, white and yellow carrots.

Yellow carrots contain xanthophylls, which keep eyes healthy and prevent lung and other cancers. Red carrots contain lycopene, helpful in preventing heart disease and some cancers. Purple types have anthocyanins, powerful antioxidants that bind harmful free radicals in the body. The pigments don't appear to affect flavor.

Source: *The Furrow*.



Tax-free ag zones

Michigan has named its first two "Agricultural Processing Renaissance" zones. Created to encourage ag processing by suspending state and local taxes, both zones are in Oceana County. Ten zones will be drawn by 2002. The new zones include Peterson Farms, a family-owned fruit and vegetable processor, and Gray & Co., a sweet cherry processor.

Source: *Progressive Farmer*, February 2001.

Mustard's touch is gold

Monsanto Company and Michigan State University are cooperating with Tata Energy Research Institute in New Delhi, India, on a multi-year project developing "golden mustard." Their goal is to produce cooking oil high in beta-carotene. Such oil could help millions suffering from vitamin A deficiency.

Source: *Farm Progress*, January 2001.

Taxpayers to support E85?

Minnesota legislation introduced in January proposes matching grant funds for service stations that install E85 pumps. Stations could receive up to \$20,000 in matching state funds for installation. Station owners would also receive a five-year exemption from property tax for all E85 pumps.

The Minnesota Service Station Association and the American Lung Association support the legislation. While there are about 50

stations now selling E85, there are more than 40,000 vehicles on Minnesota roads that can burn the high-ethanol blend fuel. Supply isn't adequate for the market.

Source: *The Land*, February 2, 2001.

Trucks with a soy lining

A soy-based polyurethane truck bed liner has hit the South Dakota market. SoyOyl replaces forty percent of the petroleum in the polyol spray-on liner. An average pickup truck bed liner can utilize oil from 1.3 bushels of soybeans.

The liner can also be sprayed to coat silos, storage tanks, boat decks and trailer interiors. SoyOyl is produced at the South Dakota Soybean Processors facility, a co-op owned by more than 2,000 soybean producers. Plans are underway to market the liner in other states.

Source: *The Land*, January 19, 2001.

Fishy diapers

Madison, Wis. — Fish ground into a supergel could be used as a disposable diaper absorbent, says Srinivasan Damodaran, a University of Wisconsin food scientist. He patented the process for making a gel that he claims will absorb 400 times its own weight. Diapers currently on the market contain a super-absorbent crystal or powder that absorbs 100 times its weight in water. Also, Damodaran says the fish-based gel deteriorates in landfills within 28 days, unlike petroleum-based gels that break down slowly.

His fish of choice is carp, an undesirable species brought to the Midwest by 19th century German immigrants. He says 20 million pounds of carp could be harvested annually in Wisconsin alone, which the state's Department of Natural Resources says it would welcome.

Source: *Associated Press*, *Minneapolis Star Tribune*, February 27, 2001.



ILLUSTRATIONS © UNCLE HYGGY

Ag Web Sites

BY JENNIFER PENA

It's all about animals this time. We've searched for the most original animal-based sites we could find. Some are informative, some entertaining, some humorous. Whatever your pleasure, they're worth a click. And make sure to stop by www.auri.org to see what's new since your last visit.



Flocks of many feathers

www.cyborganic.net/people/feathersite/Poultry/BRK/PoultryPage.html

A site featuring all your fine feathered friends — from chicks, ducks and geese to peafowl, pigeons and turkeys. FeatherSite loads up on pictures, links and plenty of information; browsers can view videos or check out books on favorite poultry. FeatherSite makes it possible to get info on everything from incubating to showing prize fowl.

Udderly collectible

www.udder.net

Cow curtains, books, posters, or any cow collectible one could think to ask for — Udder.net's got them all. The site also offers a cow slideshow, moo sounds and a free newsletter. Meet other cow lovers on the bulletin board, scroll through valuable cow links and don't miss the ... um ... interesting cow pictures on your way.

Pig improvements

www.pic.com

Pig Improvement Company has been working for 36 years to improve hog breeds. PIC is a supplier of pig breeding stock and passes its knowledge on for clients' use in their own environments. The company not only offers commercial breeding stock, but resources in food science, consumer science, reproduction, artificial insemination and genetics. PIC is available in more than 30 countries worldwide.

Kid shepherds

www.mylamb.com

MyLamb.com's mission: to help FFA and 4H kids find lamb-raising information easily. The kid-friendly site offers a range of services including a message board with chat feature, a calendar of events, activities and articles. Not lamb or sheep-savvy? Read up at the "Just Visiting Sheep and Lamb Sites" section to get a quick refresher.

Web ranching

www.ranchernet.com

A guide to livestock on the Web, this site also offers its own software package, "The Rancher," for tracking and managing livestock operations. Browsers can become members of RancherNet; benefits include an individually-designed Web page and useful links.

Classifieds for horse lovers

www.equine.com

To buy, sell or breed your horse, this is the place to go. Post your own free text listing or search for a horse of your choice with just a few clicks. Click on the state or breed of your choice and you're given a long list of selections.

Bison management

www.softpro.ab.ca/bison.html

SoftPro Business Solutions Inc. has created BisonPro, a herd management program. BisonPro helps bison producers make sound management decisions. The program can handle such details as tracking blood tests and vaccinations, input costs, income and reproduction.

Ratite encyclopedia

www.ratiterecords.com

Did you know that the yolk of a ratite egg is acid? That's just one of the tidbits on the Ratite Encyclopedia Web page, a promotion for the 1996 publication. The site includes sample sections from the Ratite Encyclopedia, which has 35 chapters on ostriches, rheas and emus, including reference charts, illustrations, and more than 200 photographs.

Sweetening the ethanol mix

Government sugar stocks could add a kick to ethanol efforts

BY GREG BOOTH

When gas is up and sugar is down, why not make gas — or ethanol — from sugar?

That's what some sugar beet growers are asking — and recent test results suggest it might work for both sugar growers and corn ethanol plants.

In 1999, preliminary tests were completed at Broin and Associates Inc. in Sioux Falls, S.D., after representatives of the American Coalition for Ethanol and the Red River Valley Sugar Beet Growers Association contacted AURI. The groups were looking for uses for loan guarantee-forfeited sugar held by the U.S. Department of Agriculture.

"We've proved at one ethanol plant that sugar was an accelerator (for ethanol fermentation). We want to prove that this is a reality across a broader range of different plants," says Wayne Wagner, legislative liaison to the sugar beet growers executive board and a director of the American Coalition for Ethanol.

Full-scale plant tests, conducted in 2000 at Minnesota Energy in Buffalo Lake, Minn., showed that adding 1 to 4 percent sugar to fermenting runs has "no adverse effect on the fermentation process," says Edward Wene, AURI biologist. Although more tests must be completed before the value of adding sugar to the corn ethanol process can be defined, Wene says the tests indicated sugar in amounts above 4 to 5 percent would leave excess sugar after fermentation.

Sugar guys like it

"As sugar growers, we're in favor of having USDA pursue more research on this," says Wayne Wagner. "There's a project in USDA hands right now, sponsored by the North Dakota Corn Council, the American Coalition

for Ethanol and the Northern Crops Institute ... to take 100,000 tons of excess sugar and give it out to 10 ethanol plants to follow up on research that Ed (Wene) did. ... We've shown support from the Minnesota Wheat and Barley Growers, North Dakota Grain Council, North Dakota and Minnesota Farm Bureaus, the Farmers Union, and rural electric (cooperatives). There's a broad base of entities and people who would like to see the research go forward."

The benefits, Wagner argues, include reducing USDA's sugar storage costs and consumer energy prices, and a rally in U.S. sugar prices.

Wagner even sees sugar ethanol as a potential solution to imported Mexican sugar and air pollution south of the border. Instead of dumping sugar on the U.S. market, Wagner says, Mexico could use its excess to produce ethanol, a cleaner burning fuel.

Corn producers threatened?

Minnesota corn producers, who supply about 80 million bushels of corn per year to produce 220 million gallons of ethanol, might see added sugar as a threat, Wagner acknowledges. "That's why we went through the research. As long as we consider it a (food), the price of sugar should never be competitive with corn. The idea is to use the government stock sugar to help the ethanol industry."

In his report, Wene writes, "Some ethanol plants may be able to add supplemental sugar to the fermenters and continue to grind the same amount of corn. This would result in an increased amount of ethanol produced while still utilizing the same amount of corn."

"The good thing is that the use of (government-held) sugar in the process is not a very costly scenario for the ethanol plants," Wagner says. "In the short term, the economics work." ■

SOYNUTS FROM PAGE 13

Retailing the snacks has seen "a little bit of a slow start in some regards," admits Brakke. "You may have 10 or 20 deals on the table and one goes through, and then one may resurface later."

About 50 other companies produce similar snacks, and there's a wide difference in taste, size, texture, roasting methods and nutrition, Brakke says. Nevertheless, "we believe taste-wise we have the best product out there. At trade shows we often hear, 'These are the best ones we've ever tasted.'"

More than a business

Brakke, who says he saw the niche for organic crops 10 years ago, values his organic operation for its answers to the "sustainability, economic and health concerns that go along with farming conventionally. I like the challenge, because it's definitely a

higher management situation. Our goal is to vertically integrate, where everything we grow on the farm we would take to retail, to take as much value as we could out of what we were producing. Purchasing the plant was a big step."

For Brakke, Earthwise means more than a package of soy snacks or even a way to make a living. "The ultimate goal is to have a business that would be sustainable enough to be here for several generations." ■

Dog with attitude

BY DAN LEMKE

South St. Paul, Minn. — At a recent pet show, Kurt Fischer observed a dog owner pick up and slowly devour a “Plaid Dog” Turkey Tender treat. He refuses to feed his dog anything he wouldn’t eat himself, he told Fischer.

Hmmm ... “For a lot of people, their dog is part of the family,” explains Fischer, president of St. Paul Pet Company, maker of the Plaid Dog treats. “They feel a special obligation to take good care of their pet.” For dogs’ best friends, St. Paul Pet has devised a line of premium, low-fat pet treats.

A long history

St. Paul Pet Company is a division of the family-owned Van Hoven Company, which has been in the meat byproduct recycling business for 125 years. Such longevity gives the company a broad understanding of the livestock and animal feed industry — knowledge suited to value-added opportunities.

“We had an awareness of (pet treats) as a way to diversify and reach a new market,” Fischer says.

Plaid Dog treats consist of high-quality turkey, most of which just missed labeling requirements for human consumption. The criss-cross shaped tenders are meaty yet low in fat. Fischer claims 16 calories per treat, and says they contain no byproducts, artificial flavors, colors or BHA (a preservative).

“Not only did they have a viable idea, (St. Paul Pet) had also done enough homework to have a good feeling that this would be a real opportunity,” says Lisa Gjersvik, AURI project director in Waseca. “The way they approached the whole venture was smart. They understood the importance of what the customers want and tailored their product around that.”

AURI funded marketing assistance to help the company establish a “look” or brand identity in its logo and package design.

Doggie likes it

Plaid Dog Turkey Tenders first hit store shelves, appropriately, the day after Thanksgiving — but not before enlisting the help of 20 beagles.

Plaid Dog treats were placed on dishes side by side with a competing product. After the dogs had been fed a meal, they were turned loose on the treats. Fischer says they analyzed which treats the dogs

approached first, which they ate first and which they ate more. Two days of testing showed the dogs preferred Plaid Dog treats.

“The main thing we have going is that dogs love it,” Fischer says. “Getting people to try our products once is the key. Once they do, we think the dog will sell it for us.”

Howlin’ growlin’ garlic

Even the packaging declares this is no ordinary pet treat. With flavors like “Howlin’ Growlin’ Garlic” and “Original Tail Waggin’,” Fischer says the company spent a lot of time developing the right message. The resealable-foil pouches even include a “snarf-down” date to ensure freshness.

St. Paul Pet studied consumer preference and ran mini focus groups to determine brand strategy. Fischer admits the name “Plaid Dog” doesn’t have any particular meaning; the name just grew on people and carries a certain attitude. And a classy product deserves a classy package, he says.

Plenty of company

St. Paul Pet is not the only company that realizes people will spend money on their pets. Heavy hitters like Purina, Heinz, Nestle and others all have pet treat products on the market. While they may have the edge on volume, Fischer believes St. Paul Pet produces a higher quality product.

Plaid Dog treats are sold in more than 40 Midwest retailers, primarily in independent stores or smaller pet product chains. The plan is intended to help St. Paul Pet carve out a niche without drawing too much attention.

“If a product is successful, it’s likely to be imitated,” Fischer says. “We want to make a nice treat and do a good business. We’re not looking to take over the world.”

Fischer says he’s encouraged by the reception Plaid Dog treats have received, but says they still have a giant task ahead. He’s also pleased St. Paul Pet has not had to do it alone.

“We’ve had a good team putting this all together,” Fischer says. “The support we received from AURI has helped and added a sense of legitimacy to what we were trying to do. That support is welcomed.” ■

For more information on St. Paul Pet Company, visit www.stpaulpet.com.

Are these treats both dogs
and humans can love?

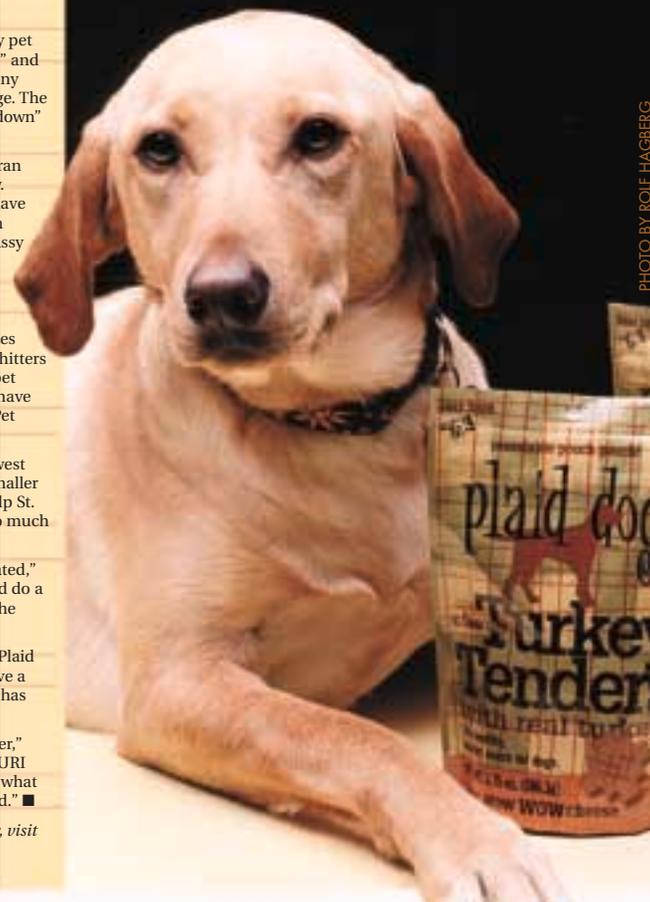


PHOTO BY ROLF HAGBERG