USDA Sustainable Agriculture and Research Small Grains Project Draft Marketing Report

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Broadening the range of small grains marketing opportunities and uses in the region has proven far more complicated than merely providing growers with contracts for high-quality, food-grade grain. Efforts to provide small grains to food processors and grain handlers – who were initially open to working with this initiative – have run up against recurring patterns of obstacles.

Pooling oats in volume (for dispersal in lot sizes of 7 rail cars per month), for instance, could not surmount the logistical problems of critical grain storage space shortages past July of each year. Agreements to accept semi-truck loads of grain, while easily attainable, required bottom line contracts for huge production that could not be attained with 50 to 60 scattered growers in 20-acre trials. Wildly fluctuating prices for corn and soybeans (from record highs to 10-year and 50-year lows) in the past 5 years also influenced feed prices early on, in ways that circumvented trial delivery to food grade markets.

Persistent marketing research, ongoing negotiations with Asian markets and coordination with growers and grain buyers during this 3-year initiative, however, have brought about new strategies and new prospects for re-establishing small grains production in the Upper Midwest. This report first describes present market conditions. It then recounts the progress and some of the marketing efforts associated with the small grains initiative. It also charts a course for market strategies and approaches that show strong promise for small grains production. It concludes with a few observations about what will be necessary if any of these strategies is to successfully restore the economic viability of wider rotations to include small grains and cover crops in this region.

Foreign Competition Grows Even Stronger

Shorter growing seasons across Canada's vast grain producing region have long provided the impetus for strong small grains production. Spring wheat plantings in 1996 exceeded 24.6 million acres, and barley acreage the same year fell just short of 13 million acres. Spring wheat and barley are among the top three crops grown in Canada. About 40 percent of Canada's oats were exported in the 1998-99 growing season, and most of this grain went to the United States' performance (mostly premium horse feeds) and milling oat markets (rolled oats or its components). In the Canadian domestic market, about 4 percent of. the oats produced are manufactured into food for human consumption and another 4 percent are grown for seed. The rest of Canada's oats are largely produced on farm and fed to livestock.

It is the pooling of small grains and strong, collective production capacity that continue to drive their Canadian export to the United States. Together, the Saskatchewan Wheat Pool and its wholly-owned subsidiary Can-Oat operate 470 line elevators in Canada with more than 80,000 farm members. They dominate the grain trade in that nation and have in less than 15 years become the largest industrial supplier of oat products in the world.

Can-Oat Milling added a second processing facility in 1997 at Saskatoon, Saskatchewan, to its first modern plant constructed in 1991 at Portage la Prairie. These two facilities process more than 250,000 metric tons of raw oats every year into both intermediate and finished food products. Daily processing of oat ingredients exceeds one million pounds. About 95 percent of this production is exported – much of it to the United States, and Can-Oat has avowed that it will maintain a leading presence as a supplier to industrial cereal and baked goods manufacturers in this hemisphere.

Visitors to western provinces of Canada view quarter, half and full sections of land planted in oats. Fall harvests have in recent years found oats stacked in huge mounds on platforms at grain elevators filled beyond their capacity. Railroad sidings at these elevators typically can accommodate as many as 50 cars, and some have two sidings holding that number, connected to a strong rail network extending into the United States.

University of Wisconsin oat breeding research program manager Ron Duerst traveled with Wisconsin Crop Improvement Association staff to Manitoba last year. The delegation sought to lay the groundwork for registering Wisconsin oat varieties in Canada. Interest there in obtaining varieties such as Gem and Vista releases from Wisconsin stem from their varying maturity rates, which could spread harvest time for Canadian cash grain growers. The UW program, which obtains funding from the Quaker Oat Company, has been releasing oat varieties since at least 1941, and Duerst has been breeding oats for 33 years in U.W.'s department of agronomy. Duerst said devaluation of the Canadian dollar (1.00 CAD = 0.675219 USD, as of July 9, 2000), volume, pricing and ready U.S. markets all seem to contribute mightily to vast plantings in a region well-adapted to growing high quality, plump oats.

In the face of this formidable Canadian force and small grains production capacity, the Quaker Oats Company has in the past 2 years formed an alliance with Cargill, Inc. Cargill is the largest grain handler in the world, with annual marketing, processing and distribution sales of $3.3 billion. Cargill has 82,000 employees in 59 countries, and it entered Canada's grain handling business by acquiring National Grain in 1974. But its grain merchandising presence in Canada was actually established nearly 70 years ago, and it has extensive holdings and enterprises from the western provinces to Quebec.

Cargill constructed a major east coast grain export terminal in Quebec in 1958. It has since acquired or constructed inland grain terminals, Maple Leaf Mills'grain division, Cyanamid Canada's retail fertilizer distribution network, a $60 million beef processing plant, a Saskatoon canola crushing plant, a 51-percent interest in Prairie Malt, one of the world's premiere malting companies and a 50-percent interest in Alberta Wheat Pool's Vancouver grain export terminal.

Under its new arrangement with Cargill, Quaker has been sourcing oats in Canada at volumes of 25-rail car lot sizes to meets its 50-million bushel annual demand for oats. The 99-year-old cereal maker enjoyed $5 billion in net sales in 1999 across all food categories, and it has a 10 percent share of the $7.6 billion U.S. cold cereal market. Quaker initially agreed to purchase semi-load lots of oats from growers who have been collaborating with the USDA SARE small grains initiative. It wanted a minimum contract, however, of 750,000 bushels of food-grade quality oats. Growers in the initiative have met Quaker's food-grade standards (13 percent moisture, 36-pound test weight, etc.), but logistics, freight and volume requirements have conspired against successful transactions.

Ultimately, the depth and strength of Canadian oat production, pooling efforts and organization have continued to depress oat prices – and consequently domestic food-grade oat production – in the United States. Yet 3 consecutive years of record corn and soybean production – and 10- and 50-year lows in prices – provide strong economic incentive for conventional U.S. growers to find viable crop and cropping system alternatives. Projected corn harvests for 2000 were 73.1 million acres of corn, up from 70.5 million in 1999, and 73.5 million acres of soybeans, up from 72.5 million last year. USDA forecasts in July 2000 showed farmers getting an average of $1.70/bu for corn, 10 cents below last year's prices, and $4.40/bu for soybeans, down 25 cents from last year's average. Average wheat prices were forecast at $2.50/bu, unchanged from the 1999 average return.

Pooling & Premium Potential in the Upper Midwest

While individual growers have shown they can readily grow quality oats, wheat and barley that meet grain-purchasing specifications for a variety of uses, delivering volume in heavily consolidated markets still poses a terrific challenge. Sourcing sufficient quantities of small grains for individual buyers and processors in the United States continues to present an obstacle to growers. Major members of the brewing industry, for instance, seek a minimum of 25-rail car lots of grain. Seminole Feeds, based in Ocala, Fla., has in recent years sought a high-quality, 600,000-bushel oat supply or pool of suppliers for an expanding recreational horse feed market along the eastern U.S. seaboard.

This initiative, however, has demonstrated that even with meager resources and a small base of growers, volumes of small grains for targeted markets can be achieved in the Upper Midwest. In advance of the 1999 wheat harvest, Small Grains Update newsletter notified its mailing list, of 300 growers and others, of an "on-farm buyer's call" arrangement with CGB Enterprises. The small grains initiative's staff also described this arrangement in a two-page release and feature story distributed to general circulation and agricultural publications in several states in advance of a field tour in July 1999.

CGB Enterprises, Inc., based in Mandeville, La., was founded in 1969 as Consolidated Grain and Barge. It is the joint venture of ITOCHU Corp., the fourth largest company in the world by revenues in 1997, and the Japanese National Federation of Agricultural Cooperative Associations (ZEN-NOH). ITOCHU operates Quality Traders, which contracts with U.S. farmers for specialty grains. ITOCHU has also put together an umbrella-type holding company for a leading brewery in China. It heads up a textile company group and think tank for the Japanese textile industry, and it operates SIG Logistics, Inc., a Florida-based computer-controlled distribution center for one of the largest U.S. convenience store chains.

CGB has integrated grain origination, handling, storage and merchandising with several other inter-related services. It provides multi-modal bulk commodity terminaling; vessel anchorage services in New Orleans; and barge, rail and truck transportation.

In the on-farm buyer's call arrangement promoted through the small grains initiative, CGB offered to pay a $.10/bushel premium. The bid was made to growers who agreed to load their grain together in bulk within a certain time period. The offer for one barge-load lot of wheat sought 50,000 bushels of grain within a specific shipping period. The wheat was to be collected at one of CGB's northern Illinois facilities. By the end of the harvest CGB's purchase of wheat under the arrangement greatly

exceeded the single barge-load sought. CGB actually bought 12 barge loads of wheat from Upper Midwestern farmers, approximately 600,000 bushels.

The ultimate buyer of this wheat, which was collected at CGB's regional headquarters on the Illinois River in Hennepin, Ill., has not been named. The headquarters draws from an area extending across northern Illinois into central Iowa and southern Wisconsin. Feed-grade soft winter wheat purchased from farmers in this program reflected the difficulty in attracting interest from premium markets to the Upper Midwest.

Strategies for Deriving Higher Returns from Wider Rotations

A. Winter Wheat Variety Trial Targets Premiums – With assistance from the small grains initiative, two northern Illinois farmers began late last year growing high-protein, hard red winter wheat. The Patriot variety of wheat being grown for seed will eventually target the bread milling market. Millers have indicated they will purchase this wheat according to milling specifications at $.50 to $1/bushel over soft winter wheat. Production harvested in July 2000 could provide 7,500 seed units that will be available for planting in the coming fall.

A private industry consultant to the small grains initiative has been working for several years to procure a milling quality wheat variety, such as Patriot, for producers in the SARE project. Spring wheat varieties currently planted in the Upper Midwest were often developed through western wheat breeding programs. Such varieties were thus developed in arid climates and alkaline soils, and their trials show very low yields.

Negotiations with Canadian concerns for a hard red variety were finally successful last year, with acquisition of Patriot seed from C&M Seeds in Palmerston, Ontario. C&M Seeds has 419 Canadian growers producing 18,892 acres of milling wheat, which provides the growers with $20 to $50 more profit per acre. The Patriot variety was developed in southern Ontario at about the same latitude as Milwaukee, Wis. This new hard red winter wheat has an extremely hard kernel and other functional characteristics sought by millers. It also boasts straw strength essential to hard reds grown in high nitrogen ground such as is sometimes found in cash grain growing areas. Trials have demonstrated excellent winter survival, early maturity, mildew resistance and protein premiums.

To make bread flour quality, wheat needs to be free of disease. It needs to have a high-test weight and high protein, and it must have a falling count of more than 300. Gluten strength, particularly important in bread-making, recedes by the day in fully matured wheat, with dew and moisture from night air as well as rain negatively affecting quality, test weight and gluten strength. The small grains initiative now has access to equipment to test for protein and falling count, but current wheat varieties and plantings in the central United States will not qualify for food-grade markets. Ontario growers are using high tech management practices to assure their production meets quality requirements, as well, for their new hard red winter wheat varieties. Until 2 years ago, they were producing soft winter wheat similar to that grown in our region of the United States.

On the June 2000 trip to Canada, the Sharon International Grain consultant to the initiative made an exclusive licensing agreement with C&M to produce Patriot seed in the States. The effort with Illinois growers harvested about 5,000 seed units in July 2000 from the two sites in northern Illinois. Yields, despite above average moisture and heavy rains through late spring and early summer, were 65 bu/acre and 80 bu/acre. One grower had more fertilizer present in his seed trial

and thus more lodging and not as good of quality. The other achieved 63-lb. test weight. Samples were provided to local flour millers with the intent of establishing "Identity Preserved" wheat production contracts. These contracts should become available to the initiative's Midwestern growers after additional wheat seed plantings in September 2000 for greatly expanded stocks the following year.

This effort follows a marketing strategy this initiative has been pursuing with small grains during the SARE project. It seeks to establish premiums and/or food-grade prices for corn, soybeans and small grains, grown together in a wider rotation that yields superior output characteristics and qualities – less incidence of disease, toxins, pests, for instance – across the production. The effort has been discussing the merits of this approach with Japanese and domestic concerns.

Quality Traders, which produces specialty grains in the United States for distribution in Japan and elsewhere, has led this promotional effort. It is funding a study at the Wisconsin Integrated Cropping Systems Trial in Elkhorn, Wis., to document the quality characteristics of corn and beans grown in the wider rotation. Fred Kolb with the University of Illinois is also growing out milling wheats at the research station in DeKalb County, Illinois, and he is conducting baking trials on these wheats with millers. Reduced damage and yield from white mold in soybeans, for example, is targeted in this research of the effects of wider rotations on grain characteristics. Quality Traders has also underwritten the Patriot seed effort with a buy-back agreement. Buyers willing to purchase corn and beans at premium prices from this wider rotation represent minimum lot sizes of 30,000 acres. Asahi Breweries, Ltd., of Japan, is interested in purchasing corn from the wider rotations.

Reflected in this strategy and negotiations are distinguishing characteristics of Asian markets for grains. Beyond the extra value derived from superior output characteristics of grains grown in wider rotations are environmental characteristics in these systems – reduced potential for nitrate leaching, reduced reliance on chemical fertilizer, banded spraying of herbicide, improved soil and plant health, which Japanese buyers are interested in supporting. They are interested in buying from environmentally sensitive farmers who are good custodians of the soil.

A cluster of central Wisconsin growers in the small grains initiative have planted collectively about 4,000 acres in a 1.4 relative maturity bean. This should allow early harvesting and fall planting of the Patriot wheat seed being grown on 80 acres in northern Illinois. It will also ensure better yield potential and reduced over-wintering problems for the hard red wheat, as opposed to plantings following the 2 and 2.4 maturity beans typically planted in this region.

In contrast to Asian markets, domestic millers and food-grade quality processors in the United States have not typically cared that the grain trade here is essentially anonymous. They are generally indifferent to the ecological goals embodied in the three-crop rotation/cover crop approach. But local grain sources for food-grade quality wheat – in an Upper Midwest region that is producing the lowest grades of wheat on the market – could find higher returns from reduced transit costs and better grades of grain in domestic markets. Wheat must be harvested between 16 and 20 percent moisture and then dried in a full-floor bin to preserve quality. Food-grade quality wheat is extremely vulnerable in the field to moisture, and marketing classes of wheat grains are strongly associated with specific output characteristics that are very important to millers.

Amber Milling recently completed a plant in Kenosha with a 21,000 cwt. (2.1 million pounds) of primary finished productive capacity per day. The plant has a 950,000-bushel storage facility as

well. Amber Milling is a subsidiary of Harvest States Milling, which recently merged with CENEX and Land O' Lakes. It is a contract buyer for food-grade grains, producing Semolina, Durum flour and bakery flour, ranging from 12 to 14.2 percent protein. With connections to Canadian Pacific and Union Pacific railroads, Amber's Kenosha plant purchases wheat in 104-car lots. Under the present strategy, growers in the small grains initiative will be able to balloon stocks of the hard red winter wheat following the July 2001 harvest. They will then be able to target Amber Milling's new hard wheat bakery flour products -- bread, rolls and related goods – with a locally sourced, high-protein grain.

B. Growers Show Power of Enterprise in Niche Markets – Establishing broad-based markets for domestic small grain production follows a 40-year decline in plantings, loss of infrastructure, rise in transportation barriers, and trend toward other grains around the Upper Midwest. Marketing this initiative is taking years of concerted efforts. Individual producers, however, have adapted well to this situation, independently seeking out or establishing specialty markets and tapping the new trend toward niche marketing. What growers do in marketing their small grains is as important as what they do in the field to get good yields.

The 1999 oat marketing results in the small grains initiative, for instance, was generally as mixed as the harvest. Best prices were received from growers selling organic oats ($2.20 to $2.40/bushel), followed by commercial oats sold directly to upscale horse stables ($1.45 to $1.75/bushel). A growing recreational horse feed market in an area extending north and northwest of Chicago to Milwaukee and Madison, Wis., is estimated to purchase 100 million bushels of oats annually. This market requires 38 lb. test weight and oats must be bright in color.

The small grains initiative has maintained an advisory and referral service through its consultant at Sharon International Grain in Walworth County, Wis., on the state line. This program has sampled, tested and advised more than 200 growers on quality and quantity specifications targeting specific organic and conventional markets. Efforts were made to link growers with the closest available market based on lot sizes and farm locations. Many shipments of oats in this referral program went to millers sourcing grains through St. Ansgar, Iowa. The consultant in this project has been challenging growers to add value to their small grains, to increase their storage capacity and their physical ability to preserve identity, and to adapt their timing of sales to the tailored needs of individual market clients.

Rick Walgenbach, cropping systems manager for the Dairy Forage Research Station in central Wisconsin, had been growing and using barley for feed at the station. With participation in the small grains initiative, Walgenbach had samples tested from his field for test weight and moisture content. Of samples from eight fields of barley, which yield more than 90 bushels/acre, only one field sample did not qualify for malting purposes. Walgenbach worked with Dave Julius of Country Partners, a grain merchandiser in Sauk City, Wis., to market his barley. But the small lot size the grain represented proved a formidable barrier, and some of the barley was eventually sold for as little as $1.13/bushel.

Joel Rissman who farms a number of grains and raises livestock in a diversified operation on a little more than 300 acres near Waterman, Ill., also uses barley as a feed for beef, chickens and turkey. He has successfully gotten premiums for all of his meats largely through direct marketing. He also got $4.50/bushel for his barley in a certified organic food-grade market (S&K Foods) in North Dakota over the course of the small grains initiative.

Doug Anthony, who farms about 600 acres in McHenry County west of Chicago, targets that market through a small feed mill in Union. He planted Jerry oats on about 50 acres in 1999 and got 82 bushels/acre with a test weight of 37 to 39 lbs. Anthony stored his oats on the farm, selling them into January following a harvest in July. He got about $1.30/bushel for these oats in a year when he sold his corn for $1.60/bushel. His chemical costs typically contrast sharply, $1/acre for oats and $25 to $35/acre for corn and soybeans. Anthony delivers his oats to the local mill to avoid trucking costs ($.20/bushel).

Tim Howe, of the Western Illinois University Allison Research and Demonstration Farm in Macomb, Ill., planted Jerry Oats in a field that was certified organic in 1998. A 220-acre farm was donated to the university for the research effort. The oats planted in1998 yielded 94 bushels/acre and achieved a 40-lb. test weight on a sample checked at harvest. Howe stored his oats in a good bin with a perforated floor at 12.8 percent moisture. He submitted samples for advice and referral to the consultant in the SARE project. He was able to get more than $2/bushel for his oats from Amish horse owners, about the same amount, as he would have received for organic oats in a food-grade market.

Dave Campbell, a certified organic cash grain grower in Kane County Illinois, plants oats, wheat and soybeans in rotations that until recently included hay. He typically gets strong yields in oats, 129 bu/acre in 1997, and respectable yields in wheat, usually 50 to 55 bu/acre. His best price for oats came 6 or 7 years ago with a 41 lb. test weight on a Hazel variety that brought $3.07 per bushel through Agri Trading. He has gotten $2.75, $2.35 and $2 per bushel in other years for certified organic oats, which he usually produces in quantities of 5,000 to 6,000 bushels annually. His oats are usually sold to millers through the St. Ansgar, Iowa, certified organic facility, but he has also sold some oats for seed. He has sold a small quantity of wheat in the past for $6/bu, but has usually gotten about $5/bu in recent years, minus trucking and marketing costs of from $.50 to $.55/bu and $.10/bu respectively. He markets his wheat collectively with other growers in the Organic Crop Improvement Association chapter of northern Illinois. Last year he got about $4.25/bu for an American wheat variety and $4.75 for a Zaria hard red winter wheat from eastern Europe that yielded only 32 bu/acre. A milling buyer for this wheat in northwest Minnesota covered the trucking costs for a semi load (an expense of at least $1/bu). Campbell has three on-farm storage bins that allow him to hold onto oats, wheat and soybeans long after harvests to take advantage of off-season price fluctuations and to dole out supply on individual market demand. Prices he gets for certified organic beans have fallen from $16/bu to about $12/bu. He is now studying the prospect of achieving on-farm oat cleaning and bagging capability individually or in a small pool of producers. The goal would be to establish a direct market for high-quality horse feed oats, for which he would grow 50 acres on an annual basis. To cover costs, including transportation, as an individual grower of this feed, Campbell believes he must attain at least $3/bu.

Adrienne Plapp, of Malta, Ill., has planted Jerry and Dane oat varieties for three years, 1997 through 1999. His test weights were 39.5 lbs., 37 lbs. and 40 lbs. respectively. He raises organic Berkshire hogs, for which he received $.65/lb. live weight in a year when conventional pork prices hit Depression era lows of $.08/lb. Plapp sells 50 to 60 pigs annually without any marketing effort. He sold some of the Dane oats he raised in 1997 (124 bushel/acre yield) to the northern Illinois horse market and some to a local elevator, where he was told they rivaled Canadian quality. Even in 1998 when his yield fell to 64 bushels/acre, Plapp found that his net income on 80 acres of oats was $69.30/acre on sales of $2.12/bushel. CROPP Organic Valley Cooperative has been negotiating

with Plapp to join their organic sales of pork to a strong Japanese market. The Japanese do not like corn-fed hogs and are very much interested in small grain feed rations.

Jeff Cappel, of Rochelle, Ill., has been including 240 to 360 acres of wheat and oats in his family's plantings since the mid-1980s. He has adapted and innovated yearly in response to fluctuations in agriculture and his customers' needs all around him, yet he has remained convinced that wider rotations are far more profitable than the conventional corn-soybean rotation. Cappel developed a feed bag picturing a horse on its cover that caught the eye of horse lovers and boosted his income to $3/bushel. He has regular horse feed oat customers and can hardly keep up with the demand, selling 3,000 bushels per year. He also has sheep and replacement cow customers for his feed oats.
In the 1998 growing season, he planted white-kerneled Jerry oats and yellow-kerneled Chaps with an average yield of 137 bushels/acre. He usually gets 120 bushels/acre with oats, but he has had as high as 165 bushels/acre and has enjoyed high test weights the last 4 years in a row (just under 38 lbs. in 1998). Cappel is certified to raise oat (Blaze, Chaps, Gem, Jerry, feed oats), wheat and soybean seed through the Illinois Crop Improvement Association. His commitment to quality production is evident in every area of his operation. He maintains hand de-tasseling of corn, for instance, working with crews of 50 teen-agers instead of mechanized equipment to avoid self-pollination and weakening of seedling vigor. He maintains strong management skills both in his production practices and in marketing, with a strong separation of the two. One year ago Cappel's oat and wheat sales were down to half of what they were in 1996. But in the 2000 growing season oat seed sales were excellent, and he had sold out of the Gem variety before the end of planting time. He gets between $4.50 and $4.75/bushel for oat seed, varying his price by little more than a quarter/bushel since 1995.

Mike Cerney of Sharon, Wis., has planted Cardinal and Kaskaskia varieties of wheat in a three-crop rotation for a number of years. This year he added Glacier wheat to his plantings. He got yields of 73 bushels/acre and 75 bushels/acre on Cardinal and Kaskaskia respectively in the 1999 growing season. He has sold his wheat on his own for 4 or 5 years mostly for seed to farmers throughout Wisconsin and northern Illinois, and he got $3/bushel for his wheat this past year.

C. Adding Value, Cooperative Development – The small grains initiative has uncovered strong grower interest in northern Illinois, southern and central Wisconsin and northeastern Iowa in the concept of developing a farmer-owned enterprise for small grains. In winter producer meetings for the small grains initiative, 28 growers (almost all of those present) filled out two-page surveys of interest in support of this approach. Marketing and business studies would have to document the feasibility of such an undertaking, and significant investment and public grant or loan support would also be essential. The retail dollar value of breakfast cereals, snack and pet foods in the United States, however, is more than $40 billion annually, with cereals marking steady growth through the 1990s and representing more than one-fourth of that sum.

A farmer-owned, value-added marketing strategy could stimulate economic incentives for farmers to widen the conventional corn-soybean rotation to include small grains and cover crops. It would seek to make this possible for growers by mapping out business, marketing, product and processing plans for stronger returns they could derive from their own value-added manufacturing.

Agricultural cooperatives -- Sunkist, Ocean Spray, Gold Kist, Welch's, Land O'Lakes -- have proven highly successful over the years in the United States. About 75 "new generation" cooperatives, such as the Dakota Pasta Growers Co-op in Carrington, N.D., and the Minnesota Corn

Processors Cooperative, have sprung up since 1990. These cooperatives are largely focusing more on value-added products, market (rather than supply-driven) orientation, offensive-based strategies and up-front farmer investments than have traditional cooperative farm ventures. They respond to strong needs in the agricultural community for local level involvement, multi-state

If a cooperative of agricultural producers were to successfully develop, market and sell its own specialty foods and products from small grains, it would need strong marketing assistance and support. Manufacturing value-added products would require even more careful attention to detail. Ensuring realistic equipment requirements for hulling, cleaning, milling, grinding, screening, feeding, conveying, extruding and flaking of the grains would all need to be considered before the size of investment necessary could be calculated. Safety, sanitation, ease of use, reliability, availability of repair and replacement services, and special design features would all have to be considered as well. Scattered cooperative agricultural enterprises of this type across the nation, however, have a long established history of finding new uses for members' products; developing new machinery for grading, sizing and packaging; and inventing new processing techniques through research.

In an initial phase of small grains product manufacture, custom processors would need to be sought out and contracts procured. The small grains initiative polled Dale Drachenberg, manager of Didion Milling in Johnson Creek, Wis., regarding milling of oats into flour and extrusion of oats into pet food form; Norm Arns, owner of Particle Control, Albertville, Minn., regarding custom grinding of milled oat flour for specialty product manufacture; and Peter Malecha, president of Custom Food Processors, Blue Earth, Minn., regarding manufacturing cereals from oats and other small grains on contract. All expressed interest in working with a small grains cooperative of farmers and providing services to them for manufacturing specialty foods and products, which the group would then market and sell across the Upper Midwest.

Custom Food Processors, in southern Minnesota near the Iowa state line, employs 230 full- and part-time people. It manufactures value-added ingredients, ready to eat breakfast cereals and snacks. The majority of its production is under contract with food companies, but it indicated it would modify its research and development fees to help a farmer-owned enterprise get off the ground. Such development usually costs about $3,900 per day plus ingredients. Some of the best-known names in food are on products it helped develop and produce.

A cooperative small grains business could target the growing interest in green label, organic, locally-grown and eco-label foods. It could set sustainable farming standards for its growers, including diversification, nutrient management, systems approaches to farming, reduced chemical inputs, organic matter budgeting, use of plow-down green manures and cover crops and wider rotations. It could set sustainable manufacturing standards that would work to incorporate intermediate levels of technology and energy conservation into its food processing. It could seek to establish a customer base as close to home as possible. It could also seek to branch out to other communities at some point in membership growth and encourage autonomy in these new associations for local production. It could offer ongoing promotions and incentives to its customers to suggest new ways to achieve greater sustainability. And it could freely offer its educational materials and model to encourage sustainable associations in other communities.

This effort could network with the nonprofit Food Alliance of Portland, Oregon, and other organizations around the country that have already launched green label, sustainable agriculture

efforts. It could study other "new generation" cooperative ventures farmers have started in this decade. And it could work to integrate lessons learned from consumer-based green label campaigns with farm-based entrepreneurial efforts.

Models for such farmer-owned enterprises are taking shape and beginning to receive public support. Rudi's organic bakery began an expansion into North Liberty near Iowa City this spring with the help of state financing that encourages farm stock ownership. The state of Iowa appropriated $25 million in interest-free loans for grower-owned ventures as part of the stimulus to this enterprise, which will purchase certified organic wheat from Iowa farmers. It will also offer 5 percent stock ownership to farmers and non-recourse loans for the stock purchase. Industrial revenue bonds, transportation connections and equipment leasing are helping finance the bulk of the new 100-employee bakery. Rudi's, which started 24 years ago in Colorado, is targeting a high-growth organic market east of Chicago and freight savings with construction of the new facility.

A farm group in North Dakota has attracted the interest of 250 oat growers in their state to a project called Oat Technologies. The group was planning earlier this year to undertake an equity drive this past spring to build a $40 million processing plant within the year. The plant will make lethicin, sterols, antioxidants, oils, defatted soluble fiber, proteins and starches from oats. The group forecasts annual revenues of $25 to $25.5 million and hopes to pay farmers up to $2.20/bushel. The cooperative estimates it will need 51,700 tonnes of oats to meet its production goals, and it is targeting products used in nutraceuticals, cosmetics and industrial niche markets. Representatives of Oat Technologies visited the annual meeting of the Prairie Oat Growers Association, held in Winnipeg in December 1999, to try to attract Canadian growers to the cooperative.

About 10 Illinois growers who have participated in the small grains project, with growers who had already been planting small grains and using cover crops outside the project, are trying to organize a group marketing effort partly as a result of this project. The farmers are making application with Boone County Soil and Water Conservation District and members of the Northern Illinois Organic Growers Association for grant assistance to undertake joint marketing of feeds produced in expanded rotations. Initially, simple cracking of corn and cleaning of oats for bagging and sale under a sustainable agriculture label and a campaign for local farmers would be attempted under this effort.

Overcoming Transportation Barriers

Disappearance of local businesses and infrastructure for handling, transporting and processing small grains over the past 40 years is still making return to production difficult for individual growers. Long-distance trucking fees eat into returns and diminish premiums. Freight-car volumes prohibit small-scale production and discourage experimentation.

As transportation costs generally rise with fuel costs and depletion of energy resources, even large processors will soon be persuaded to patronize growers closer to home.

Kikkoman Foods, Inc., has operated a plant in Walworth, Wis., since 1972. making soy sauce, teriyaki sauce and related products. The best-selling and most widely recognized maker of naturally brewed soy sauce built a second $40 million plant in Folsom, Calif., 2 years ago. Together these facilities are producing more than 20 million gallons of soy sauce alone each year for distribution through 10 centers around the United States.

These processors' Japanese parent corporation of the same name was founded 83 years ago in Tokyo, Japan. Yet its experience as that nation's largest soy sauce brewer actually goes back more than 300 years. Steeped in such tradition, this family's descendants enjoy a long-standing reputation throughout Asia and the world as a premium product producer of uncompromising commitment to old world values.

It is thus not surprising that such a manufacturer should respond favorably to a small grains initiative proposal to source a quality wheat variety in the fertile region adjacent Kikkoman's Midwest plant. While that facility has long stood in America's most fertile soybean and wheat-producing region, it has been railing its grains from outside the area. For wheat, which Kikkoman's Walworth plant uses in quantities of a rail car per week, this has meant a reliance on dark northern spring wheat varieties grown in the Dakotas. This wheat presently is not identity preserved and is supplied by Cargill. It is dark in color for the manufacture of soy sauces.

Kikkoman's requires a wheat with 13 to 15 percent protein, similar moisture features and zero vomatoxin presence. If stateline growers enrolled in the small grains initiative can meet such requirements, they can deliver single truck lots to the Walworth facility. The plant lacks storage capacity and has been operating under a "just-in-time" sourcing system for the 500,000 bushels of wheat it purchases in any given year.

For wheat growers in northern Illinois and southern or central Wisconsin, this situation presents a truck buyer advantage. The freight spread over western suppliers is about 40 cents/bushel, and the premium for food-grade quality wheat Kikkoman's needs for its products could bring 50 cents to $1/bushel.

Conventional and Organic Markets for Feeds

La Crosse Milling in Cochrane, Wis., takes semi-load lots (about 1,500 bushels for oats), but it buys only through grain dealers. Late this past winter they were paying $1.46/bushel for oats and $2.20/bushel for barley that met their specifications. For milling oats they seek a heavy, white grain with at least 13 percent protein and 38-lb. test weight. Moisture maximum is 13.5 percent. Barley purchasing specifications stipulate a minimum of 11 percent protein, 45-lb. test weight, 13.5 percent moisture maximum and no more than 4 ppm Deoxynivalenol (vomitoxin).

Golden Grains in Sparta was Wisconsin's first organic feed mill. It started moving in that direction in the mid-1980s and was certified with OCIA in 1991. It buys both oats (32-lb. test weight minimum) and wheat (60-lb. test weight minimum) for blending and processing feeds. It will buy grains by the semi load. It is also frequently looking for certified corn and soybeans. This past winter it was paying from $1.70 to $2/bushel for organic oats, depending on test weight and other qualities.

Small Grains Marketing Prospects for the Future

In 20 to 30 presentations with farmers and farm groups around the region each year of the past 3 years and in talks at scores of field days during this project, collaborators have addressed these marketing strategies in the overall effort to widen rotations with small grains and cover crops. Barriers cited in the grant application to SARE – foreign transportation, pooling, volume and

marketing power – at the start of this effort are just as real today as they were 3 years ago. But it should be obvious from the efforts of this initiative that competitive markets for domestic production of small grains do exist, that some foreign strengths can be matched and that prospects for individual and collective enterprise are just as real as the challenges.

Upper Midwestern farmers have shown in this effort that they can produce high quality small grains that meet food grade, milling and malting specifications. Exceptions to this rule relate to the limitations they face in meeting required lot sizes, coordinated handling and shipping capabilities that mega markets typically require in the United States today. American farmers have demonstrated they can also out-innovate research, with some exceptions due to the lack of grain variety research and breeding programs that do not address premium and added-value markets in the Upper Midwest.

If the sustainable agricultural community is to help growers in the Upper Midwest make a significant share of domestic small grains production as fluid as corn and soybeans, it will require minimally the three dominant features of our marketing effort in this project:

- Strong grower involvement, networking and communication;
- Outside, public assistance and commitment to making these approaches for both domestic and foreign markets work and to providing resources necessary to help farmers make them happen;
- Concerted, cooperative work with Asian markets that recognize and reward agronomic and ecological advantages of quality grains grown in wider rotations.

Growers on a broad basis are not accustomed to aggressively marketing their grains, and they are not organized to do so collectively. They need the seasoned experience of parties who have worked in the private grain industry. Multiple delivery and collection points, obviously, must be established to help overcome lot size and transportation barriers. On-farm and collective storage capacity with strong sensitivity to the timing and delivery requirements of specialized markets needs to become commonplace. And the importance of this mode of delivery and customer service needs to become widely understood and accepted. A complex situation that has evolved over the past 40 years of decline in small grains production in the United States, thus, defies simple solutions.

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