



Extreme Demands—Extraordinary Products: What's In It for Midwestern Agriculture?

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Demands on corporations to focus their objectives on more than the financial bottom line have never been as forceful and effective as they are now. These demands come from groups such as PETA and Greenpeace, which have a long and confrontational history, as well as more mainstream groups, such as the trustees of California's Public Employee Retirement Program (CalPERS). What the groups have in common is their belief that they can force corporations to adopt business practices that further their particular social agendas. Currently, PETA is pressuring Burger King to force its suppliers to adopt animal welfare standards. PETA praised McDonald's after it adopted minimum-welfare standards for the hens that produce McDonald's eggs. Greenpeace continues to pressure countries and corporations on a range of issues, and the group has extended its target to food companies that use ingredients derived from genetically modified crops. CalPERS has pressured corporations in which it is a major shareholder to adopt guidelines that guard against use of child labor and that enhance environmental quality.

An increasing number of corporations are adopting corporate responsibility codes that guide international business practices in terms of their environmental and social impacts. And, increasingly, both government and non-governmental organizations are backing certification programs that enable consumers to choose products verified as meeting one or more standards in the production process. For ex-

ample, the Forest Stewardship Council recently gave Anderson Windows effusive praise for agreeing to purchase only wood from forests that have been certified by the Council as being "well managed," based on certain environmental criteria.

Some deride these efforts as simple blackmail by un-elected, elitist organizations that do not have the general public's interests in mind. Companies are forced to cave in to such demands because of the well-founded fear that resisting will tarnish their corporate images. But, to the extent that these groups are pursuing the objectives of their members, one could also say that these efforts are simply a reflection of consumers' interest in buying products that give their lives meaning. That is, many consumers will feel better about themselves if, for example, they make their morning coffee from "fair trade" coffee, whereby a greater proportion of their coffee dollar goes to the primary coffee producer in exporting countries. Or Iowans can feel better about food they've purchased at a farmers' market because they know a local grower produced it.

As these two examples illustrate, "extreme" consumer demands are becoming more commonplace in agriculture and the food industry. These demands are extreme only relative to traditional demands for food that is nutritious, quick to prepare, and good tasting. But now, consumers want food that not only saves them time but also promotes health, instead of just providing nutrition, by protecting them against heart disease and cancer. And increasing numbers of domestic and foreign consumers are demanding food that promotes social objectives, such as environmental



quality here and abroad or support for small family farms.

The first reaction of most in agriculture and the food industry is to resist these demands because they are not based on sound science. For example, most U.S. observers vilify the European Union (EU) for its ban on U.S. hormone-treated beef, because no harm has been demonstrated to people who eat this beef. Similarly, the EU labeling requirement for products made with genetically modified organisms (GMOs) is resisted because GMOs have not been shown to harm consumers. The sound science argument is quite persuasive when it comes to government policy regulations. But suppose the consumer, whether in the European Union or in the United States, really does not want to eat hormone-treated beef, or products made with Roundup Ready soybeans? Maybe producers' rejection of these preferences as nonscientific

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is simply self-defeating, because no one can force consumers to buy these products. That is, it might be more fruitful to think of these preferences as opportunities instead of barriers. Did McDonald’s adopt its new animal welfare guidelines because sound science showed that laying hens would be positively affected by more space, or did the company adopt the regulations because it was a good business decision from a marketing standpoint?

Is it in the interest of U.S. agribusiness and agriculture to respond to extreme demands as a marketing opportunity? Or should the sector try to limit change and carry on with business as usual? The answer depends in part on the cost of meeting new consumer demands and on whether the trend toward increased demands will continue to grow. And it depends on the outlook for agriculture under a business-as-usual scenario.

ECONOMICS OF BUSINESS-AS-USUAL AGRICULTURAL PRODUCTION

Business-as-usual agriculture is characterized by many farmers producing a nearly identical product, with price set by traders in exchanges such as the Chicago Board of Trade or the Chicago Mercantile Exchange, with the most successful producers being those who focus on attaining the lowest per-unit costs of production over a long period of time. That is, traditional agriculture is a 100 percent commodity business.

Technological change works to ensure that per-unit production costs of the lowest-cost producer keep getting lower. And lower costs mean greater supplies. Unless demand grows faster than supply, prices drop. This largely explains why commodity prices throughout the 1990s were depressed. The world’s ability to produce commodities grew faster than the world’s appetite for them. This situation reversed itself in 2000, in the energy sector at least, where robust growth in demand outstripped supplies.

But over time, higher prices for commodities inevitably spurs supply,

as new companies enter the business and as existing companies adopt new technologies. The result of this new supply is that upward price spikes prove temporary. One of the first lessons that economics students learn is that, over time, profits in excess of those needed to keep a commodity producer in business will eventually fall to zero. That is, commodity producers should expect that the “normal” situation for their industry is one of zero profits.

Producers can only expect continual positive profits if there are restrictions that prevent new companies from entering the market. Such restrictions could be high technological or capital requirements for startup firms, or they could be government restrictions on entry, such as those for tobacco and peanuts. Another restriction is that a producer could offer a unique product that others would have difficulty replicating. In other words, the product is no longer a commodity; rather, it is differentiated in some respect.

Advocates of value-added agriculture hope that moving a farmer up the supply chain closer to the consumer will transform agriculture from a situation of zero-profit commodity production into one of positive-profit production of food. But if many producers join in to supply these food products, one would expect that the long-run profits of these new enterprises would also dwindle to zero.

Is the outlook for all but the lowest-cost commodity producers really this grim? The answer can be found by looking at the long-run return on agricultural assets. Indeed, the answer is this grim. Is there an alternative? Perhaps the only alternative is to move away from commodity production toward something new, something unique.

ECONOMICS OF DE-COMMODITIZATION

Suppose a group of farmers banded together to produce something unique, for which there is a high demand. For example, Niman Ranch

sells free-range pork. The source for the pork is a unique Iowa pork aggregator who has few competitors. This producer can expect a higher price than is paid for commodity pork. This higher price rewards the aggregator for being unique and compensates him for any additional costs incurred. If there were no reward for being unique, then there would be no incentive for a new entrant into this particular line of work. However, if the reward for being unique is high enough, then a new entrant likely will be attracted. If the market did not grow fast enough to accommodate the increased supply from this new entrant, then it is likely that the uniqueness reward for free-range pork would soon be bid to zero, as both suppliers would bid for business.

The main point here is that the early firm that identifies and develops a market should expect to earn profits. But as these profits become publicized, they serve as an incentive for other firms to capture some of them. Without significant market expansion, the price premium received will decrease. Does this mean that it is not in the interest of agriculture to move away from commodity production? After all, in the long run the returns to being unique from the new market will be zero. But just as the early adopters of a new cost-reducing technology receive additional profits, so too do the early movers into a new market. So, clearly, early movers have an incentive to supply to and/or develop products in segmented markets.

How likely is it that enough new markets will develop to support a significant movement of farmers away from commodity production? In part, the answer depends on two factors. The first factor is whether the drivers of change of consumer preferences discussed in the first part of this article are successful in forcing companies to change their procurement requirements, and in convincing consumers to care more about how their food is produced. If they are successful, then these extreme demands will

offer important marketing opportunities. The second factor is whether the cost of meeting these extreme demands falls enough to make the market feasible.

FEASIBILITY OF MEETING

EXTREME DEMANDS

Given a choice, I would prefer to purchase a tender New York strip steak that came from a painlessly killed steer that was raised in a grass pasture by a farmer who had adopted waste management practices that did not contribute to water pollution. Furthermore, given a choice, I would prefer that the steer had been fed antibiotic-free, animal-product-free feed, and had not been given supplemental growth promoters.

If this extraordinary steak were presented to me in my local grocery store at a price within \$1.00 per pound of a commodity steak, then I would buy it. A brief market survey of my colleagues indicated that more than half would buy it also. How likely is it that, first, I will ever be offered this choice, and, second, that the cost will be within \$1.00 per pound of a commodity steak? The answer to the first question is that products with many of these attributes are available now through the Internet (for example, www.lasatergrasslandsbeef.com). But the cost is more than \$1.00/lb greater than commodity steaks, and I cannot access the steaks at my local grocery. So I will not purchase the steak—yet.

But this story illustrates that the time is not too far off when consumers will be given much more choice in the kinds of food they purchase. Our ability to set up identity-preserved supply chains that deliver full information about the products being delivered at a reasonable cost is growing rapidly. Information technology is being used to implement management systems to preserve the identity of products and product ingredients. The Internet is facilitating direct contacts between buyers and producers of products as varied as

coffee and crafts made by artisans and artists from around the world.

IDENTITY PRESERVATION AND THE FUTURE OF AGRICULTURE

Growing consumer demand for products that complement and reinforce individual morals and ethics, combined with an increased ability to deliver products laden with attribute information, increases the likelihood of a proliferation of viable markets. An increasing share of agricultural production will be devoted to meeting these new market demands. Some of the new products will require that suppliers change their production practices. Individual or coordinated groups of growers working alone or with downstream processors and retailers will deliver a wide variety of meat and grains that are source identified and tailored to meet specific consumer demands.

Of course, for the foreseeable future, a large share of agricultural production will continue to be devoted to commodity production. After all, markets for new products can grow only so fast. As always, the successful commodity producers will be those with the lowest cost of production.

How fast we move from commodity production to customized production depends upon the willingness of consumers to pay for new products and the willingness of companies to invest in developing supply chains to deliver customized production. As these investments take place, farmers who would like to start de-emphasizing commodity production in their operations should be on the outlook for new opportunities from both start-up food companies and from well-established companies that are looking to expand their product offerings. ♦

If you are interested in learning more about this topic, plan to attend the 2001 Agricultural Forum, "Extreme Demands—Extraordinary Products," on March 2 in Ames. Details are available at www.agforum.com or by calling 515-294-6257.

Acreage Shifts under Freedom to Farm

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The 1996 FAIR Act contains two vehicles to deliver financial support to farmers. Loan deficiency payments (LDPs) pay farmers the difference between loan rates and market prices when market prices fall below the loan rates. LDPs are paid on a per-bushel-produced basis, so they are directly tied to production amounts of each eligible crop. The other vehicle is AMTA (Agricultural Market Transition Assistance) payments. These payments arrive regardless of which crop, if any, is planted. The lack of planting requirements is why the '96 FAIR Act is also known as Freedom to Farm. (Of course, under the old programs, farmers also had complete freedom to plant what they wanted if they were willing to forego government aid.)

The decoupling of a significant portion of farm program payments from production decisions means that farmers will plant crops that yield the highest per-acre returns. With previous farm bills, farmers had an incentive to plant what they always had planted to remain eligible for crop-specific payments, and they had an incentive to increase acres of program crops to increase future payments. The result of these "coupled" payments was that traditional corn farmers had extra incentive to continue planting corn, and wheat farmers had extra incentives to continue planting wheat. Because land devoted to soybeans was not eligible for subsidies, government programs were biased against soybeans.

Figures 1, 2, and 3 show how farmers in each county of six major midwestern agricultural states

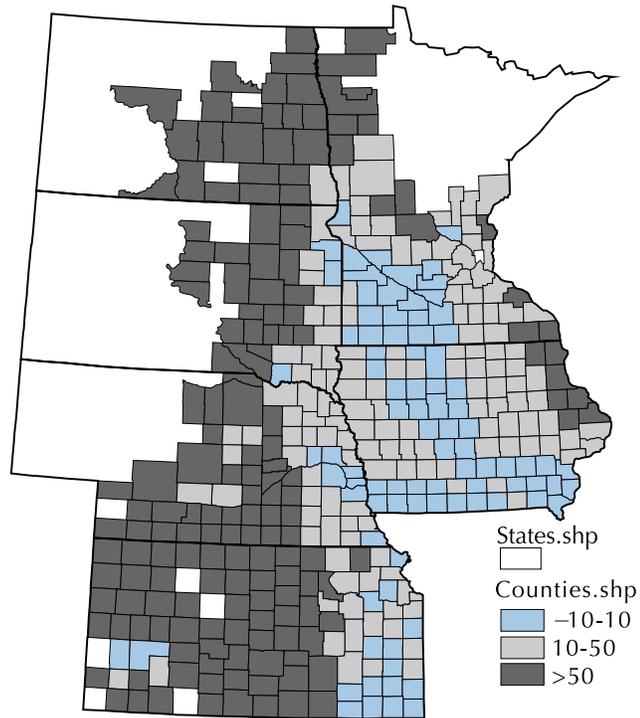


FIGURE 1. PERCENT CHANGE IN SOYBEAN PLANTED ACREAGE: 1995-1999

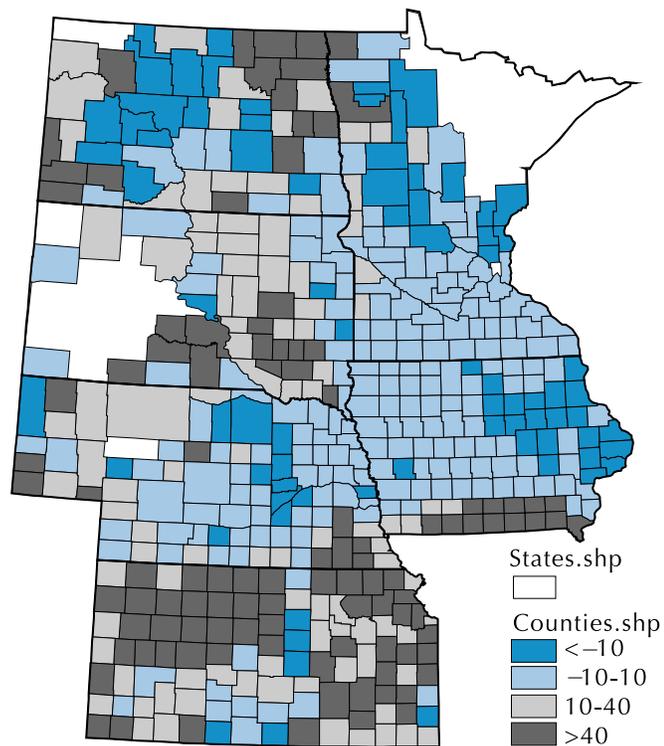


FIGURE 2. PERCENT CHANGE IN CORN PLANTED ACREAGE: 1995-1999

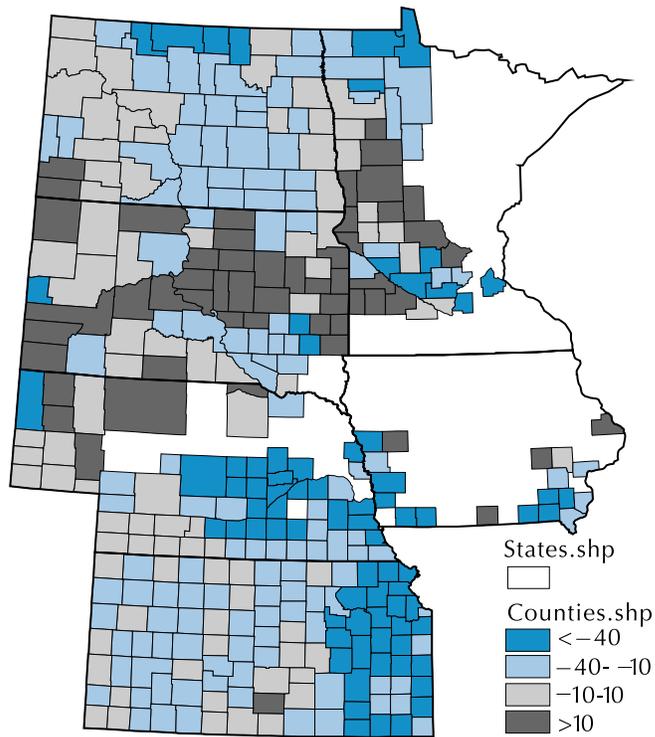


FIGURE 3. PERCENT CHANGE IN WHEAT PLANTED ACREAGE: 1995-1999

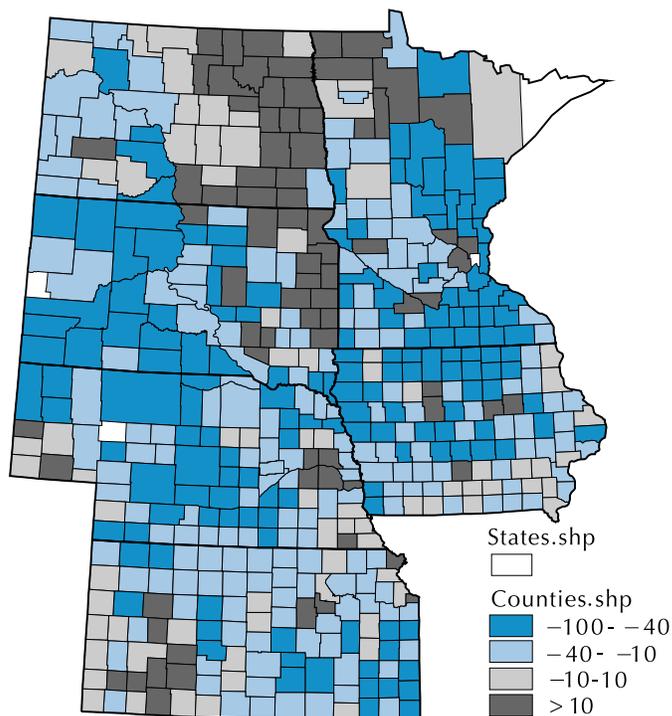


FIGURE 4. PERCENT CHANGE IN CRP ACREAGE: 1995-1999

(Iowa, Kansas, Nebraska, Minnesota, North Dakota and South Dakota) responded to the decreased incentive to plant corn and wheat. Figure 1 verifies that adoption of the FAIR Act beginning with the 1996 crop did indeed result in more soybeans being planted. Most counties raised significantly more soybeans in 1999 than in 1995, with the dark gray counties increasing their soybean acres by more than 50 percent over this period. Figure 2 shows that corn acreage moved west, with counties in Kansas, South Dakota, and parts of North Dakota picking up acreage, and some Iowa and Minnesota counties losing acreage. Figure 3 shows the dramatic decreases in wheat acreage in Kansas, Central Nebraska, and most of North Dakota. A comparison of Figure 3 with Figure 4, which shows the percent change in acreage enrolled in the Conservation Reserve Program (CRP), shows that loss of CRP land in South Dakota is correlated with increases in wheat acreage. Figure 4 also shows that expiration of many CRP contracts in 1996 and 1997 resulted in large decreases in program participation in the major production areas of Iowa, Minnesota, and Kansas, whereas CRP acreage increased in the Red River Valley of North Dakota and eastern South Dakota.

These large changes in acreage demonstrate the ability of farmers to change planting decisions in response to changes in economic incentives. Whether the incentives come from the market, such as reduced demand for U.S. wheat, or from the government, such as a relatively high U.S. soybean loan rate, farmers are ready to plant the crops that give them the greatest total returns. Congress needs to recognize that farmers have this flexibility if they are to avoid adverse unintended consequences of their current efforts to redesign farm policy. ♦

Iowa's Agricultural Situation

Starlink and BSE Affect Exports

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The StarLink controversy and the spread of Bovine spongiform encephalopathy (BSE), or Mad Cow Disease, in the European Union have resulted in shocks to demand that are affecting our exports, one negatively and the other positively. Let's examine these incidents to better understand why and how events like these potentially can impact trade.

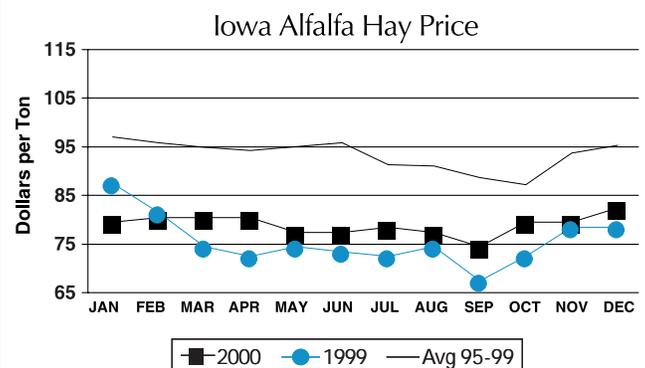
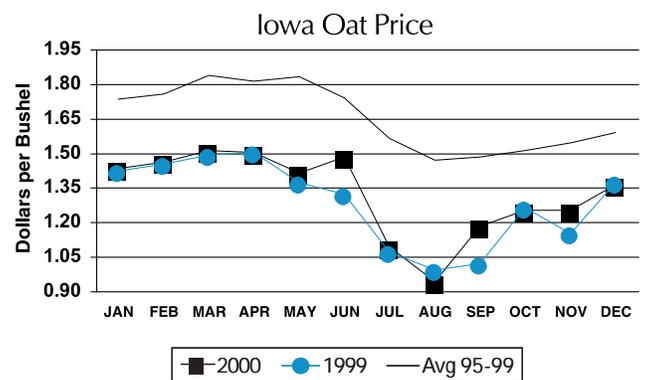
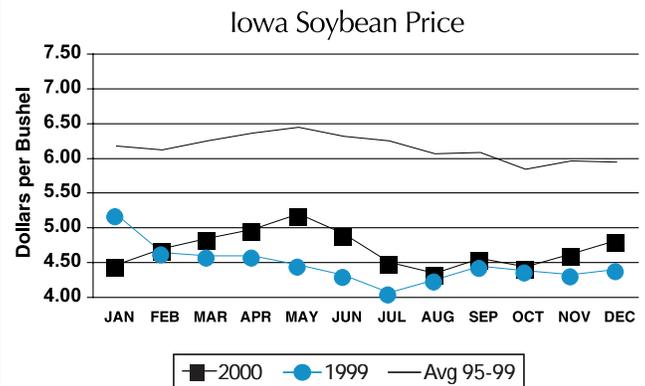
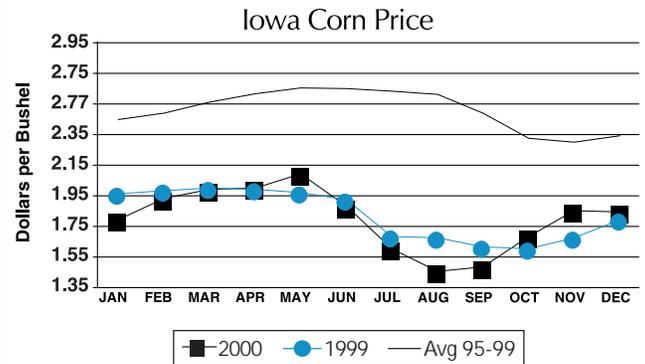
STARLINK CORN EFFECTS

Bt corn is a genetically modified (GM) variety of corn bred to produce the *Bacillus thuringiensis* (Bt) protein that makes the plant resistant to the corn borer. StarLink is a brand of Bt corn developed and distributed by Aventis CropScience. For various reasons, the Environmental Protection Agency requires registration of GM crops and then grants usage approval guidelines for each variety. Because of concerns about possible allergic reactions in humans to a certain protein, CRY9C, StarLink was granted a partial registration, which allows animal feed use but excludes food or export use.

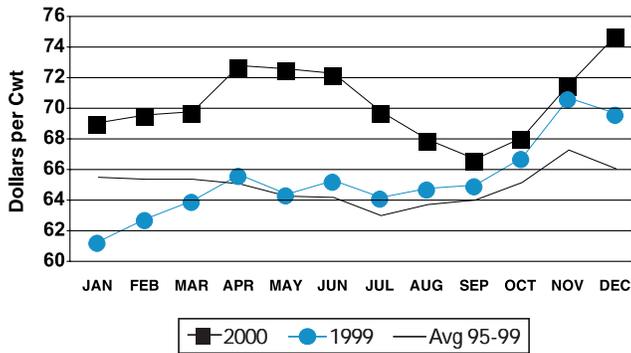
In September of 2000, StarLink corn was found in the U.S. food supply. This led to a massive recall of products found to contain traces of the unapproved protein in the United States. By October, the Japanese claimed they too had detected CRY9C—not approved for import—in snack foods and animal feed products, resulting in recalls there. The U.S. Department of Agriculture quickly granted export approval for shipments that contained traces of StarLink corn. This prompted Japanese officials to formally request that the United States take all necessary precautions to ensure against StarLink's presence in all Japanese purchases. Consequently, there has been widespread testing of inbound shipments, such as those from giant food processors like Archer Daniels Midland, as well as testing of outbound vessels from the United States, as many as three times for a single load bound for Japan and other customers. These tests are designed to register positive for a sample at the rate of 1 or more in 400 kernels containing the CRY9C protein and to register negative for a sample that has amounts of less than 1 kernel containing the protein. An official 10-pound sample of approximately 13,000 kernels will test positive if 33 or more kernels contain CRY9C. However, the CRY9C-containing kernels in any shipment may not be uniformly distributed throughout the load. Therefore, there still exists an uncertainty as to the purity even if a load tests negative. This uncertainty of purity is having a negative impact on U.S. corn exports.

Table 1 shows the cumulative weekly exports and outstanding sales of corn for the week ending December 28 for

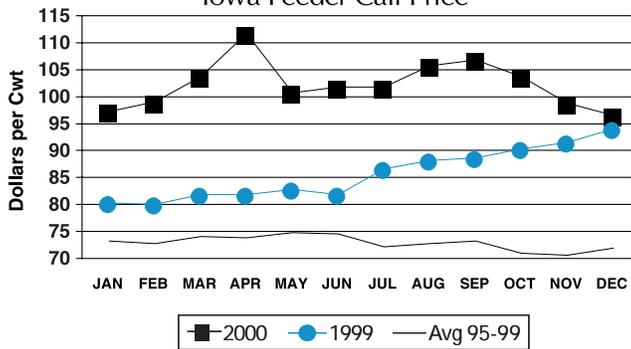
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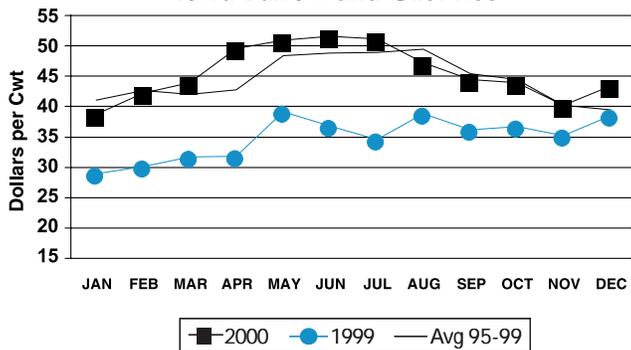
Iowa Steer and Heifer Price



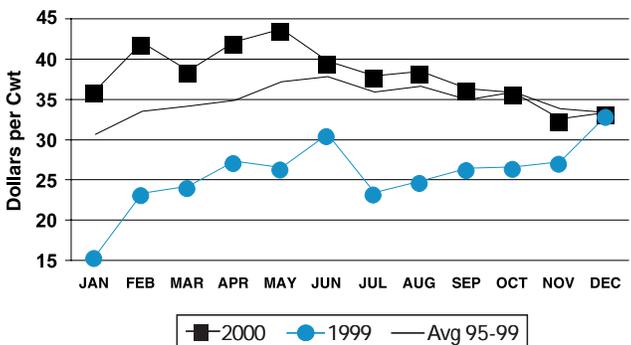
Iowa Feeder Calf Price



Iowa Barrow and Gilt Price



Iowa Sow Price



Iowa Cash Receipts Jan. - Sept. 2000

	2000	1999	1998
	(Million Dollars)		
Crops	3,360	3,259	4,039
Livestock	4,463	3,527	3,749
Total	7,823	6,787	7,787

World Stocks-to-Use Ratios

	Crop Year		
	(Dec. Projection) 2000/01	(Estimate) 1999/00	1998/99
	(Percent)		
Corn	17.10	20.77	21.15
Soybeans	13.95	14.77	16.35
Wheat	18.41	21.20	23.07

Average Farm Prices Received by Iowa Farmers

	Dec.* 2000	Nov. 2000	Dec. 1999
	(\$/Bushel)		
Corn	1.82	1.83	1.77
Soybeans	4.79	4.59	4.37
Oats	1.35	1.24	1.36
	(\$/Ton)		
Alfalfa	82.00	79.00	78.00
All Hay	81.00	78.00	77.00
	(\$/Cwt.)		
Steers & Heifers	74.50	71.30	69.40
Feeder Calves	95.80	98.00	93.30
Cows	34.10	36.60	37.50
Barrows & Gilts	43.10	39.90	38.20
Sows	32.80	32.00	32.50
Sheep [†]	35.40	34.50	31.00
Lambs [†]	62.00	63.00	74.00
	(\$/Dozen)		
Eggs	0.61	0.48	0.38
	(\$/Cwt.)		
All Milk	12.00	11.80	11.10

*Mid-month

[†]Estimate

Continued from page 6

this marketing year compared to levels a year ago. Total exports are down 10 percent from last year's levels. Japan and South Korea generally account for close to 50 percent of corn exports; currently, exports to these two destinations show declines of 10 and 55 percent respectively when compared to last year. What is even more telling is the rate of decline in outstanding sales: down 21 and 72 percent for Japan and South Korea and down 15 percent overall when compared to last year. It is interesting to note that as of October 5, before StarLink was detected in export supplies, exports were running 8 percent above the previous year. The point is pretty clear: although we make no attempt to measure the decline attributed to StarLink, our major customers are steering clear of U.S. corn and will not forward-book corn of U.S. origin until the uncertainty of purity is removed.

BSE EFFECTS

The Europeans have been battling BSE for some time now. However, late in 2000 the European Union (EU) experienced an increase in the number of new cases reported in France, as well as verified cases in Germany and Spain, where previously no confirmed cases had been diagnosed. BSE is a chronic wasting disease that is characterized by a slow deterioration of the brain that ultimately leads to death. Experts believe that BSE is related to a similar disease that can be found in humans. They suspect that BSE can be transmitted to humans, in the form of the human variant, by the consumption of certain bone-in beef cuts that contain the prion, or protein particle, responsible for the disease. They also surmise that the disease is transferred within the

TABLE 1. CORN EXPORTS (000 MT)

Destination	1 Sept.-28 Dec. 2000 Marketing Year			
	Outstanding Sales		Accumulated Exports	
	This Week	Year Ago	This Week	Year Ago
Japan	2783	3535	4494	5020
South Korea	212	756	704	1568
All Exports	6697	7894	15269	17010

Source: FAS/USDA

TABLE 2. SOYBEAN EXPORTS (000 MT)

Destination	1 Sept.-28 Dec. 2000 Marketing Year			
	Outstanding Sales		Accumulated Exports	
	This Week	Year Ago	This Week	Year Ago
EU	1455	415	3631	4039
All Exports	6103	4521	11059	11070

Source: FAS/USDA

cattle herd through the practice of feeding meat and bone meal of infected animals.

Feeding meat and bone meal has been a common practice in the EU for years and the meal is a primary source of protein for livestock. Since the latest BSE scare, the EU has banned the practice of feeding livestock certain animal by-products for six months, effective January 1, 2001. This measure is an attempt to curb the spread of the disease and to ensure food safety. It is likely the ban will be extended for an undetermined amount of time.

The banning of feeding meat and bone meal has the potential to increase U.S. soybean and meal exports as livestock producers are forced to replace their primary protein source. Historically, the EU has relied on Brazil for soybean meal. It will be difficult for the United States to tap into this demand because of environmental groups' strong opposition to imports containing genetically modified soybeans. It will be interesting to see if, over the long term, feed demands outweigh the environmental groups' lobbying power.

However, as more of the Brazilian supply is directed toward the EU, opportunities are opened for U.S. soybeans and soybean products elsewhere. Table 2 shows cumulative weekly soybean exports for the marketing year through December 28, 2000, compared to last year. Here we see that cumulative sales to the EU are down 10 percent compared to last year, and overall sales are relatively unchanged. The most dramatic change is in the amount of outstanding sales to the EU, which is currently 250 percent ahead of last year. Increased forward booking by the EU has helped increase the total amount of outstanding sales to 35 percent above last year's total.

FOOD SAFETY AN ONGOING EXPORT CONCERN

Concerns over food safety, whether science based or perceived, can have significant impacts on exports. In order to maximize our export potential, we have to be sensitive to these concerns, now more than ever. ♦

NAFTA: Implications for Mexican and Midwestern Agriculture

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WHAT HAS BEEN HAPPENING SINCE 1994?

The North American Free Trade Agreement (NAFTA) is a success story of economic integration between Mexico, the United States, and Canada. Economic integration was on its way before the Agreement, but it received a significant boost when NAFTA went into effect in 1994. Relative to the rest of the world, merchandise trade among the three countries has intensified and is growing at a rate of about 10 to 12 percent a year. With respect to agriculture, Mexico exports fruits and vegetables, coffee, live cattle, and textiles, among other things, to the United States. The United States exports grains and feed (90 percent of Mexican imports), soybeans and soybean products, meat, cotton, yarn, and textiles to Mexico. Tariffs have disappeared or have been decreasing between Mexico and the United States (there is no tariff, for example, on Mexican imports of U.S. and Canadian non-breeding cattle and beef).

NAFTA and trade integration have given a boost to real income growth in Mexico (5 percent a year, on average, since 1994, excluding the 1995 crisis). There is a growing middle class of 30 million people consuming more and more expensive food. The United States has had stabilizing effects on Mexico, both financially, as in the 1995 crisis, and by providing large markets for Mexican exports when home consumption has been depressed. The United States is benefiting from this large and growing (in income and population) food market. The rapid emergence of supermarkets in Mexico is evidence of such growth.

Because trade integration has brought demographic and cultural changes to the United States, and because health information is improving, U.S. consumers eat more vegetables, fruits, and ethnic foods than before. This provides a large market for Mexican agriculture and food processing. This trade is seasonal but could be expanded, especially if some joint policies that maintain prices above free market prices (the so-called minimum prices) were removed.



In the last decade, Mexico has been privatizing many segments of the food marketing system—from the farm, to the warehouse, to the consumer's table. Private investment (Mexican and foreign) in food marketing is increasing, and efficiency gains (in food quality and vertical integration/coordination, for example) are coming. This positive change has occurred despite the presence of strong labor unions and vested political interests in the status quo. New supermarket chains are a major force in Mexico's reliance on market forces.

Increased mobility of capital between the two countries is a reality. U.S. investment in Mexican food processing has increased significantly (it grew to \$5 billion in 1997) but is still relatively modest. Foreign direct investment (FDI) in food processing is accompanied by contract agriculture. Large Mexican food processors have opened plants in the United States (corn mills Gruma, GIBSA, and Minsa in Iowa, for example). Mexican FDI in U.S. food processing amounted to \$313 million in 1997. Mexico is also more open to third-country investment (such as Scandinavian investment in dairy processing).

NAFTA is also an innovator in the area of trade dispute settlement mechanisms. These mechanisms are notoriously slow within the World Trade Organization (WTO). NAFTA is developing private dispute resolution capacity. The Advisory Committee on Private Commercial Dispute Regarding Agricultural Goods is supported by growers and shippers and appears to be a promising venue for dispute resolution. In the area of Sanitary and Phytosanitary (SPS) measures, the NAFTA Committee for SPS facilitates technical cooperation and information flows between countries. This cooperation decreases the cost of institution-building in Mexico and reduces the likelihood of SPS disputes.

MEXICAN FOOD TRADE AND CONSUMPTION PATTERNS: HISTORY AND OUTLOOK

Figures 1–3 and Table 1 show the evolution of grain, oilseed, and meat consumption and trade in Mexico. The figures show 10 years of historical data (1990–99) and 10 years of outlook (2000–2009) based on the Food and Agricultural Policy Research Institute's *2000 World Agricultural Outlook*. Grain food

consumption is maturing, while meat consumption is increasing relatively rapidly. The latter observation means that imports of meat by Mexico have been growing and will continue to grow, and that feed demand in Mexico will also increase, translating into increased feed grain and soybean meal imports from NAFTA partners (see Table 1).

Diet diversification is occurring on both sides of the border, although at different income levels. This diversification means limited growth prospects for U.S. food grain exports to Mexico. Food grain is a maturing food market in the medium run. Lower tariffs through NAFTA (to be fully phased out by 2008) and population growth will provide some increases in food grain trade; however, income growth in Mexico is not expected to contribute to food grain market growth.

Meat consumption in Mexico is increasing rapidly and is projected to continue to do so in the coming decade. Mexico is the second largest export market of U.S. meat products (\$900 million of U.S. meat exports including \$231 million of poultry meat and \$398 million of beef and veal in 1998). Also note that U.S. feed grain demand is embodied in U.S. meat exports to Mexico. The prospects for feed demand are much better than those for food grain demand.

With rising income, the demand for food quality increases rapidly. Consumers tend to spend more on higher quality and convenience foods rather than on larger quantities of bulk goods. This change is reflected in the market for raw agricultural commodities. Hence, U.S. exporters should be sensitive to this demand for higher quality of commodities. Tenders/contracts for grains can specify quality levels. The same argument applies for Mexican producers. Concern for quality will remain high. Achieving higher quality standards is costly and is characterized by economies of scale. For example, grading and sort-

ing have lower cost per unit in large operations.

CHALLENGES AHEAD

The U.S.-Mexico economic integration faces impediments in transportation services, though free trade in transportation services should have been in place by now. Trucks, which carry about 80 percent of traded goods, still have constrained access (drayage across the border). Mexican trucks are constrained in the United States because

of protectionism but also because of safety concerns (heavier and older Mexican trucks compared to U.S. trucks and no driving time restrictions for Mexican drivers). The recent NAFTA arbitration panel decision in favor of Mexico should bring major changes. In addition, many delays exist in both directions. Delays make fresh products vulnerable but are less of a prob-

TABLE 1. ANNUAL RATE OF GROWTH

Imports	90-99	00-09
Corn	10.70%	2.77%
Soybean	11.62%	1.49%
Soybean meal	-5.25%	17.29%
Soy oil	2.16%	6.51%
Beef & veal	16.83%	3.22%
Pork imports	19.58%	4.12%
Poultry meat	15.87%	5.69%
Consumption and Utilization Data		
Feed use corn	19.34%	3.07%
Food and other use of corn	1.15%	1.02%
Soybean domestic use	7.03%	1.43%
Meal domestic use	6.83%	2.75%
Domestic oil use	6.28%	2.12%
Beef & veal	0.83%	2.52%
Pork	2.78%	3.49%
Broiler	7.05%	2.46%

lem for grains. Rail and ocean shipments are used more frequently for the latter (for example, New Orleans and Galveston to Veracruz). Rail infrastructure is improving in Mexico, sometimes via international cooperation (such as the "NAFTA Railway" alliance), but more needs to be done. The Mexican railway system is still undercapitalized, because of past neglect

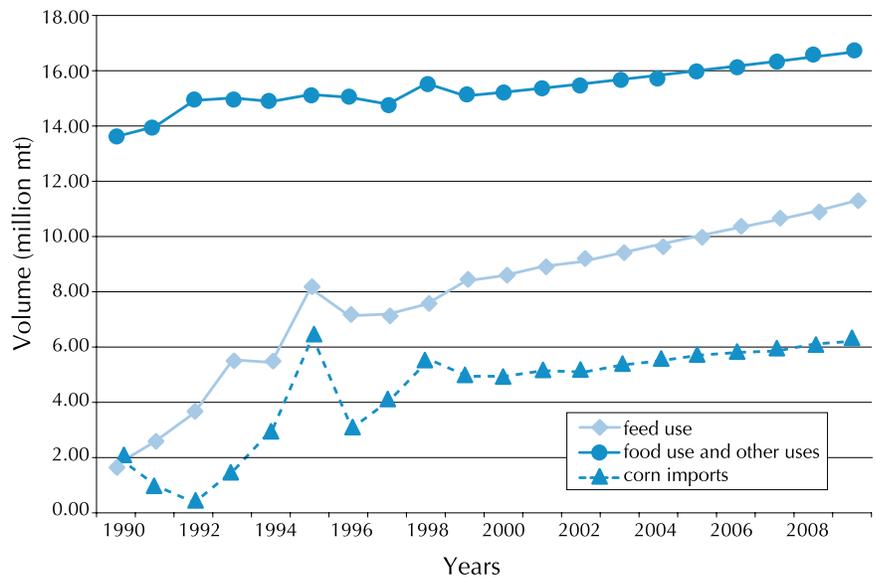


FIGURE 1. MEXICAN CORN USE AND IMPORTS

prior to privatization. For example, intermodal connection with trucking and ocean shipping is lacking, and better connections would increase the relative advantage of railways. Larger and better facilities would help alleviate some of the bottlenecks at border points. More customs personnel would help, too. Finally, Mexico has yet to build better roads to be on a par with U.S. roads. This improvement would benefit Mexico at large. Road-building projects tend to have high social returns.

Despite progress in freeing markets, Mexico still subsidizes the production of corn through input subsidies (the ASERCA program under the 1996 ALIANZA umbrella program, for example), historical entitlements (such as the 1993 PROCAMPO program), and border taxes and restrictions. Also, Mexican Tariff-Rate-Quota (TRQ) levels have been flexible or have not been enforced when local market conditions dictated. For its part, the United States distorts domestic and world markets for corn and soybeans through the loan rate, effectively depressing world prices, and through “emergency” payments, insurance subsidies, and “decoupled” Agricultural Market Transition Act payments. Mexican farmers received \$44/hectare of income transfer (all crops) in 1997–99, and U.S. farmers received about \$85/hectare of income transfer (all crops) for the same time period. The corresponding average for all 29 Organization of Economic Cooperation and Development (OECD) countries was \$211/hectare. For corn and oilseeds, the level of income subsidy (as a percentage of price received) was comparable: 30 percent and 25 percent of producer price for corn and soybeans in the United States (computed *without* the 1999 emergency packages); 39 and 36 percent of producer price in Mexico, respectively, for 1997–99. Mexican consumers of tortillas used to be subsidized but are now taxed. The former

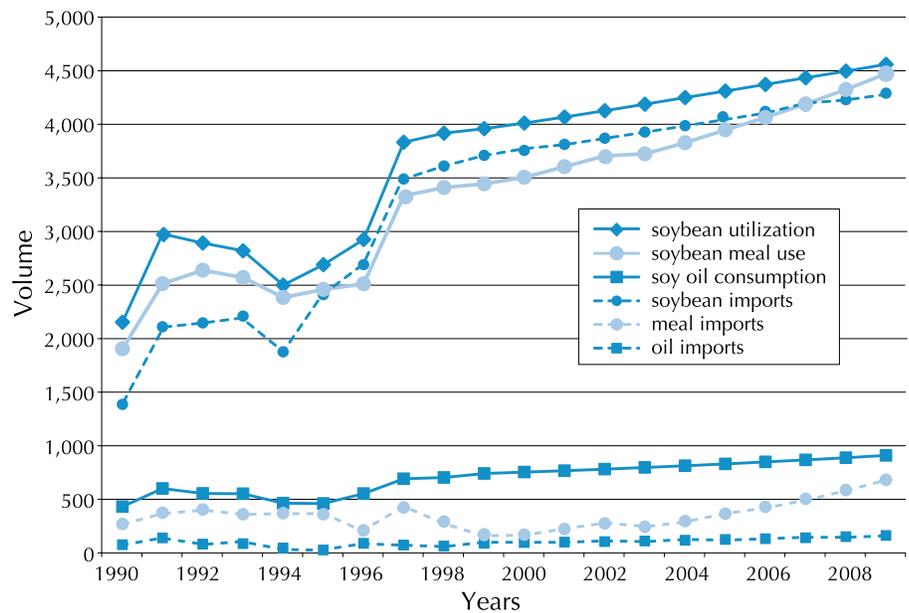


FIGURE 2. MEXICAN SOYBEAN PRODUCT USE AND IMPORTS (1000 MT)

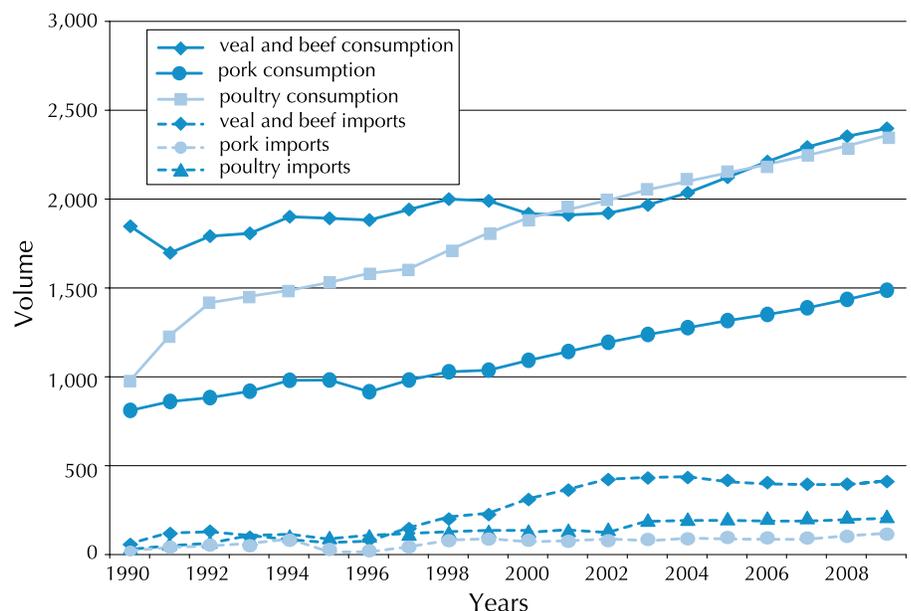


FIGURE 3. MEXICAN MEAT CONSUMPTION AND IMPORTS (1000 MT)

parastatal agency, CONASUPO, had reduced tortilla consumption subsidies and then eventually closed. New targeted programs, such as the SEDESOL program, subsidized corn consumption by poor households. On average, Mexican consumers face an implicit tax of 21 percent on tortillas, in reference to an undistorted market price, as of 1999.

NAFTA has induced SPS-based trade disputes. Phytosanitary measures are often based on legitimate concerns for health and/or the environment, but they induce disputes that are difficult to resolve. Occa-

sionally they are used for protectionist purposes. The increased cooperation between the United States and Mexico should help to resolve these SPS frictions. There is evidence of goodwill on both sides (for example, the United States' willingness to recognize improvements in poultry SPS status in Sonora).

NAFTA STORY STILL UNFOLDING

To conclude, NAFTA is a success story for agriculture-related trade and industry, although the success is not complete, because of trade disputes, transport congestion at the

border, insufficient infrastructure, remaining policy distortions, and uneven economic integration in Mexico. The continuing diversification of consumers' diets and rising income in Mexico are expected to translate into limited growth prospects for U.S. food grain exports to Mexico and increased growth prospects for feed and meat trade. ♦

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EXTREME DEMANDS



A New Agriculture for a New Marketplace?

Meet the Staff: Lyubov Kurkalova

Recently promoted from post-doctoral research associate to associate scientist this past November, Lyubov Kurkalova (or Luba as her colleagues, friends, and family call her) is busy with collaborative efforts as well as her individual research program within the Resource and Environmental Policy Division of CARD.

Luba joined CARD as a research assistant in 1993, applying her considerable mathematical expertise to the data processing, analysis, and computer programming requirements of the ongoing research. Luba came to Iowa State with a B.S. in applied mathematics from Tajik State University in Tajikistan, then a republic of the former Soviet Union, and a Candidate of Sciences degree in mathematics from Kazakh State University in the former USSR. She received her doctorate in agricultural economics at Iowa State in 1999, with a dissertation on productivity in post-Soviet primary agriculture. She credits former CARD director Stanley Johnson with helping her to choose agricultural economics, specifically production and labor economics and econometrics, as her field of specialization. "He was an enormous influence," she says.

Luba has found the practical application of her research experience and education particularly satisfying. "I am doing something very much related to real life," she says,

"to what people think about, to the decisions that people make every day. This is the attraction that I had been missing in pure mathematics—the focus of economics on real-life problems."

She is coauthor of a forthcoming journal paper, "The Efficiency of Sequestering Carbon in Agricultural Soils." Greenhouse gas emissions, and the value of nitrogen testing are two other recent projects that probe how farming practices affect environmental quality. Another is conservation tillage adoption. "The problem we are working on now is why some farmers choose conservation tillage while others do not," she says. "One hypothesis we're testing is that new adopters don't do as well as adopters who started 10 years ago because of the learning curve involved. I want to measure and communicate to farmers how much time on average they can expect the process of adoption to take before they are better off, and how much they can expect to lose in that timeframe until they're doing as well as everybody else."

Luba says the years she has spent at CARD have been very positive. "I like the commitment to high-quality research and the continuous discovery associated with my job. I not only get to apply my knowledge and training but I also learn many new things, ranging from an understanding of how farm practice



Lyubov Kurkalova

choices are made to new qualitative and quantitative economics and econometrics techniques."

Luba's husband, Alexander, is a student in the College of Business where he studies management information systems. The couple has two daughters, "two 'T's,'" says Luba, "a teenager, Anna, and a toddler, Svetlana." Together the family enjoys jigsaw puzzles and Russian movies. "We probably have one of the biggest collections of Russian videos in Ames," she says. "We really enjoy the movies, but we also want to do this for our daughters because we don't want them to lose the [Russian] language. It's important to us that they know the language and the culture." Luba is also a big fan of mystery novels and loves to do some pleasure reading when she can. "I was impressed with the Agatha Christie books," she says. "I've probably read almost all of them now." ♦

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