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The Logistics of Niche Agricultural Marketing
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Selling to Niche Markets

Many small and mid-size farm operators compete successfully in today's agricultural marketplace by supplying specialty farm products. Growing numbers of consumers and commercial buyers are interested in purchasing farm products with specific qualities. These customer preferences may be as simple as a request for a specific volume of product, such as requiring a 20-metric-ton container of grain rather than a 40,000-metric-ton bulk vessel—the typical size of an overseas grain shipment—or it may be as complex as a set of specific practices for growing, processing, packaging, and merchandising a farm item, as is the case with organically labeled farm products. (For more information, see “Organic Certification” on page 8.)

Other characteristics that differentiate “niche” farm products from mainstream farm products are:

- Specific physical characteristics, such as food-grade soybeans compared with standard feed-grain soybeans, and high-oil sunflower seeds compared with standard sunflower seed varieties.
- Physical properties proved by testing, such as foods confirmed to be free of genetically modified organisms (GMOs).
- A farm product's point of origin, especially local origin. In recent years, U.S. consumers have exhibited a growing interest in purchasing farm products from local sources, with the result that the value of farm goods sold directly from producers to consumers through farmers markets, roadside stands, community-supported agriculture arrangements, and other outlets increased 37 percent between 1997 and 2002.¹ The local food movement is being buoyed by a host of social, economic, and environmental trends, including a desire to obtain fresher, higher quality food in season; to know exactly where one's food comes from and how it was produced; to reduce fossil fuel usage in food transport; and to support the continued economic viability of local agriculture. (See more on this trend in *The Dynamics of Change in the U.S. Food Marketing Environment* at <[INSERT WEB SITE AFTER PUBLICATION]>.

¹ Market Value of Agricultural Products Sold Including Landlord's Share, Direct, and Organic: 2002 and 1997, *2002 Census of Agriculture*, National Agricultural Statistics Service, U.S. Department of Agriculture, available from <<http://www.nass.usda.gov/census/census02/volume1/us/index1.htm>>.



Figure 1. Loading pallets of grain.

Source: USDA

Mainstream bulk commodity markets favor larger agricultural suppliers that can take advantage of economies of scale to supply agricultural products at the lowest cost. Niche markets, on the other hand, are less price-sensitive than bulk commodity markets and often reward farm product suppliers with a price premium for their ability to meet stringent requirements. Small and mid-size suppliers that can meet the volume requirements and precise specifications of niche markets can often find a good fit for their limited production capacity. Moreover, these suppliers often are more flexible than their larger competitors and more able to quickly adjust their production practices to meet shifting customer demands.

To properly maintain the integrity of niche farm products throughout the supply chain and to meet customers' exacting standards, suppliers of such products must use specialized sorting, handling, shipping, and transportation methods. This document provides small and mid-sized agricultural producers and processors with an overview of the special logistical requirements that highly differentiated farm products require. It gives examples of the logistical requirements for handling and shipping three different niche farm products—food-grade soybeans destined for the Japanese export market, organic potatoes destined for the domestic market, and GMO-free dehydrated potatoes destined for the Asian export market.

Niche Agricultural Marketing Logistics

Moving niche products from farm to market is more complex and expensive than moving conventional farm products. The smaller volumes handled and the need to keep niche

products separate from bulk commodities add to the cost of handling and shipping. For example, producers of niche grains must arrange to have their niche merchandise blended, sorted, and cleaned separately from the undifferentiated version of the same grain to preserve the products' distinctive character. This handling is typically more expensive than for bulk grains because it is done in smaller batches and may require additional equipment preparation. In spite of the greater cost, the shipping of non-bulk grains has been increasing rapidly (figure 2).

Here is an example of how niche marketing requirements affect grain handlers and shippers in the case of food-grade soybeans.

Moving Food-Grade Soybeans

The United States has supplied food-grade soybeans to Japan for decades. Advancements in grain market communications and transactions, along with the advent of shipping containers and double-stack rail systems, made the Japanese market a viable outlet for United States producers. The niche demands in this market include special variety selections, production protocols, and conditioning techniques. Post-harvest practices include computerized sorting to meet color requirements, and packaging in customer-labeled totes and bags.

To get started in the export trade, the producer must locate a market for food-grade soybeans, which may be a customer in Japan or a local broker who acts as an intermediary between the producer and the Japanese buyer. The producer then selects the soybean variety and pest- and weed-control practices to suit the requirements of the customer. When the crop is mature, the producer moves it to on-farm storage or to a local elevator. Depending on their location, some food-grade soybean producers have the option of using a nearby grain elevator that specializes in serving niche grain markets, or one that divides its operation between conventional commodity and niche grain marketing. Such storage elevators segregate, rather than merge, batches of grain based on variety or growing practices, which allows product integrity to be preserved and improves traceability within the supply chain.

Packaging and transportation are then arranged to meet the agreed-upon delivery window. The soybeans are packaged according to customer requirements, typically in 100-pound bags on the farm or at a local elevator. More recently, a system has emerged to move food-grade soybeans in bulk lots to transload facilities near the port. The soybeans are moved by truck to a hopper railcar, and by railroad to the transload facility, where they are bagged and loaded into containers, eliminating the need for inland container movement.

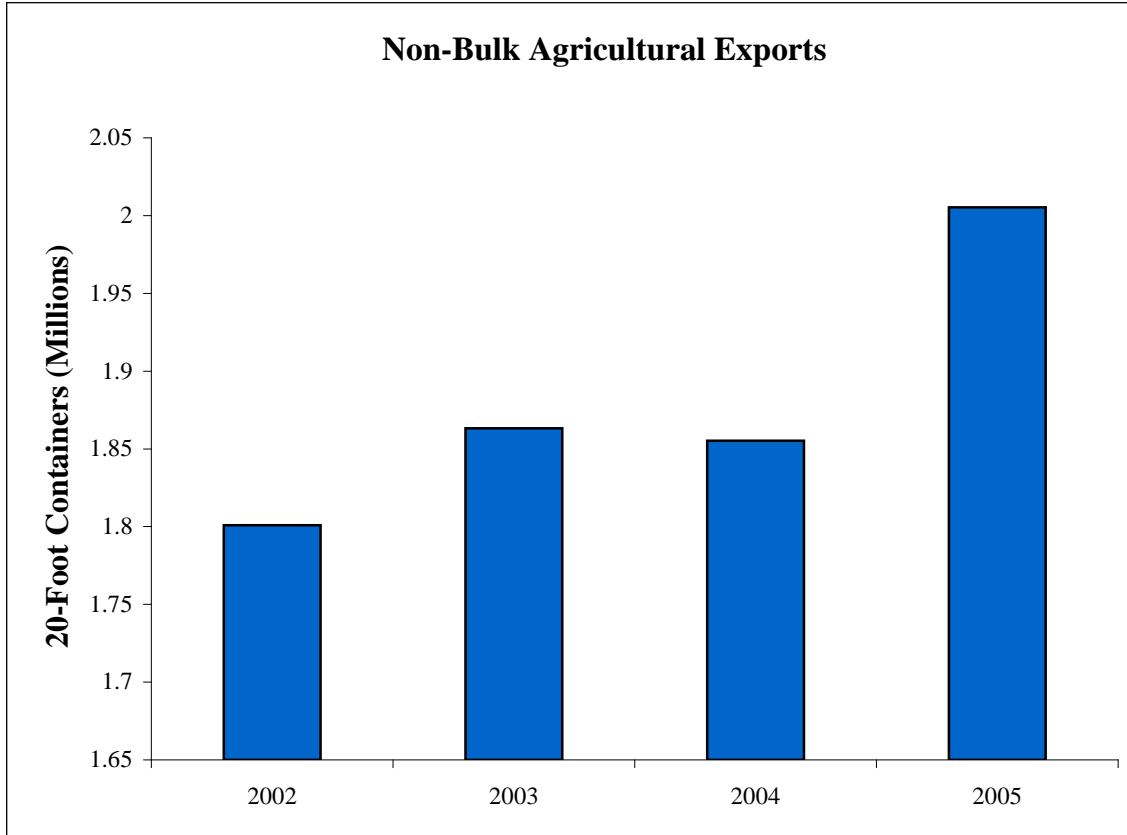


Figure 2. Quantity of non-bulk agricultural transportation.

Source: PIERS <<http://www.piers.com/>>

Shipping soybeans in containers provides security and prevents co-mingling and contamination with other types of soybeans. Using containers more than triples the transportation cost per pound (Figure 3), but is the only way to ship comparatively small amounts of food-grade soybeans without mingling them with different types of soybeans, such as varieties used for oil.

Export: Commodity and Food-grade Soybeans from Iowa to Japan, via Seattle		
<i>Estimated Transportation Cost and Time</i>		
	Food Grade Soybeans	Commodity Soybeans
	Container	Vessel
Shipped by		
Volume (pounds)	40,000	119,070,000
Inland cost	\$875	\$2,160,000
Ocean cost	\$2,000	\$2,700,000
Total cost	\$2,875	\$4,860,000
Transit Time (days)	16	40
Cost per pound	\$0.07	\$0.02

Figure 3. Comparison of transportation costs for bulk and commodity soybeans.

Source: Upper Great Plains Transportation Institute, Fargo, ND

Transportation for moving containers to a port may be secured by the producer or grain facility from the ocean carrier in a service contract, or it may be handled by a third party. The variety of transportation arrangements available to marketers of niche farm products is described more fully in a later section titled “Shipping Alternatives.”

— **SIDEBAR** —

Designer Feeds

Although buying animal feed in bulk markets is as simple as selecting the lowest bid for corn, a more complex niche market has emerged that produces designer feeds formulated to improve animals’ production of meat, milk, wool—or speed, in the case of race horses. The feed industry has undergone much consolidation in recent years, and is now dominated by a handful of large companies that use their economies of scale to produce and distribute feed inexpensively. While this has created an efficient marketing system for mass-produced commodity feeds, it has also allowed some smaller companies to take advantage of their flexibility to create a niche market. In some cases these companies not only process products to meet designer feed specifications, but contract with growers for specific feed components.

These small-scale plants condition and mix products to strengthen characteristics such as nutrition, energy content, palatability, and digestibility based on customer goals. A recent industry survey shows that 67 percent of livestock producers are requesting specific ingredients and custom blending.² Two examples of specialized feed markets are organic feeds—a requirement for organic milk, egg, and meat production—and a premium oats market that has developed within the racehorse industry.

— **END SIDEBAR** —

Marketing Organic Potatoes

Organic potatoes represent an excellent example of niche agricultural products that attain their specialty status because of the distinctive production and processing methods used to grow them and prepare them for market, rather than because of their intrinsic physical properties. Given the relatively small scale of U.S. organic potato production, and the need to preserve product integrity through each link of the supply chain to retain market value, the practices that are used to handle, distribute, and market organic potatoes are often quite distinct from those used with conventionally grown potatoes. Consequently, an examination of the organic potato industry provides a valuable lesson about steps that growers and processors of organic potatoes—and to a large extent, other specialty agricultural items—need to consider when marketing their high-value agricultural products to discriminating buyers.

Despite double digit growth in U.S. organic food sales in recent years,³ the portion of potato acreage devoted to organic production remains extremely limited. In 2005, for

² *Feedstuffs*, July 11, 2005

³“Organic sales continue to grow at a steady pace,” Organic Trade Association, May 7, 2006, available from http://www.organicnewsroom.com/2006/05/organic_sales_continue_to_grow.html.

example, 1.09 million acres of potatoes were planted in the United States.⁴ Of this amount, fewer than 7,000 acres, or less than 0.6 percent of total potato acreage, were organically certified.⁵

— **SIDEBAR** —

Organic Certification

People who produce potatoes that use the USDA organic seal (Figure 4) must be certified organic by a USDA-accredited certifying agent. USDA’s National Organic Program (NOP) defines organic production as “a production system that is managed in accordance with the [Organic Food Production] Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.”⁶



Figure 4. The organic seal.

The Organic Food Production Act of 1990 (OFPA) was passed by Congress to set standards for organic food. NOP is the regulatory agency that oversees enforcement of the Act. Organic certification means that a product has been produced, processed, and handled according to stringent standards outlined in the Act that have been confirmed by a USDA-accredited certifying agent. The NOP maintains a list of accredited certifying agents at <http://www.ams.usda.gov/nop/CertifyingAgents/Accredited.html>. Farmers who sell less than \$5,000 of organic potatoes annually are not required to be certified, but they must adhere to the national organic standards. More information about organic certification is available from USDA’s Agricultural Marketing Service at <http://www.ams.usda.gov/nop/indexIE.htm>.

— **END SIDEBAR** —

⁴ “U.S. Vegetable and Melon Industry: Total Area Harvested and Production, 1992-2005,” 2006 Vegetable and Melon Yearbook, USDA Economic Research Service, available from <http://usda.mannlib.cornell.edu/usda/ers/89011/vgstab003.xls>.

⁵ “Certified organic and total U.S. acreage, selected crops and livestock, 1995-2005,” Organic Production Data Sets, USDA Economic Research Service, available from <http://www.ers.usda.gov/Data/Organic/index.htm#tables>.

⁶ NOP Program Standards, Definitions, available from <http://www.ams.usda.gov/nop/NOP/standards/DefineReg.html>.

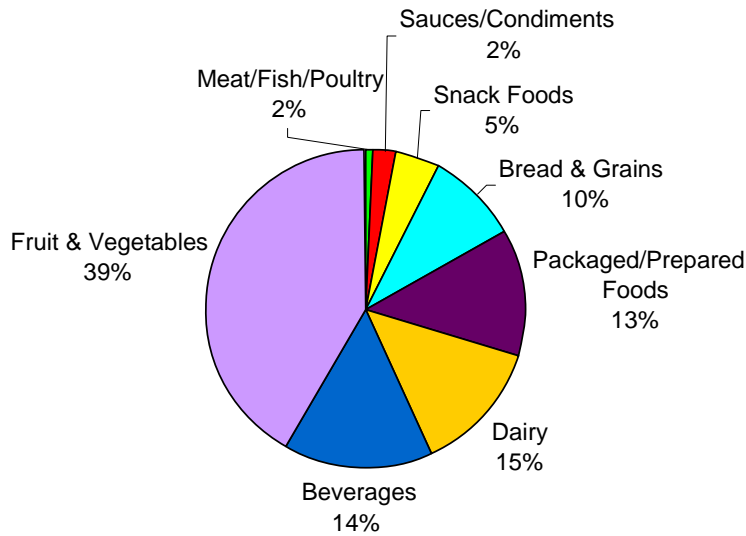


Figure 5. U.S. organic food category share, 2005.

Source: Organic Trade Association: 2006 Manufacturer Survey

Most organic potatoes are produced on a small scale along with other fresh produce in garden-like settings, but a few farmers produce organic tubers on a larger scale in traditional cropland. The process from field to storage is fairly straightforward. In some cases, it is as simple as digging the potatoes and placing them in containers, which are then purchased and picked up by the consumer.

Rank	Organic Commodity
1	Tomatoes
2	Carrots
3	Peaches
4	Squash
5	Leafy vegetables
6	Apples
7	Potatoes
8	Bananas

Potatoes raised in a field by themselves are harvested with a potato digger. Those raised in a vegetable-garden setting are dug by hand. After harvesting, the potatoes are washed, sorted, dried, and placed in storage. Ordinarily, all of these processes are done by hand. Because of the size and nature of the market, little advanced technology is used. Potatoes unfit for consumption are disposed of, including potatoes that are green, rotten, or frozen. The sorting is done by visual inspection and hand picking.

Figure 6. Top Eight Fresh Organic Fruits and Vegetables Purchased by U.S. Consumers⁷

When it is time to fill orders, the potatoes are taken out of storage and sorted again based on customer

⁷ Source: "Price Premiums Hold on as U.S. Organic Produce Market Expands," USDA Economic Research Service, May 2005, p. 5.

specifications. Finally, the potatoes are manually boxed or packaged for customer delivery or pickup. Most potatoes are packaged into 25- or 50-pound boxes and then delivered to local customers in a company-owned vehicle. The customer is generally either a local retailer or restaurant. The potatoes also may be marketed through natural food wholesalers or brokers. Some larger scale producers grow organic potatoes specifically for processors who make organic chips or frozen potato products. One such potato chip processor, Kettle Foods, <<http://www.kettlefoods.com/index.php?cID=10>>, has a line of organic potato chips. Kettle Foods contracts annually with growers. The contract specifies quality standards, such as organic certification.

Traceability is important for organic potatoes, just as it is for other fresh produce. For example, an organic potato packing plant located in east-central Minnesota processes potatoes for several organic potato growers. The warehouse stores, washes, packs, and ships certified organic potatoes to market. To ensure traceability, each lot is placed in a separate bin and coded by variety and grower. Quick locks—bag fasteners with space for imprinting—are used to package the potatoes and include lot number information used for traceback purposes. The traceability procedures used by this organic intermediary are similar to those used in the traditional potato industry. (For further information on traceability, please consult the traceability section in *Supply Chain Basics: Strengthening Vulnerabilities in the Food Supply Chain*.)

This Minnesota operation is large compared with others in the organic potato industry. It uses some of the same technologies in the sorting and packaging processes that are used with traditional potatoes. An automated screen sizer is used to remove small potatoes, and an expanding roll sizer sorts out three larger sizes of tubers. Damaged potatoes are pulled out by hand. The potatoes are bagged automatically. This market requires package-to-order fulfillment to meet consumer needs. Small and medium-sized organic potatoes are packaged in 3- or 5-pound bags and larger potatoes are put into 50-pound cartons for display. Bulk potatoes are sold loose at grocery stores to permit consumers to select individual potatoes. Most of the facility's products are shipped to retail stores, either directly or through a wholesaler. In addition, a small percentage is sold directly from the warehouse to consumers.

Relatively few organic potatoes are sold to restaurants because of the difficulties involved in communicating the value of organic ingredients to food service buyers. Unless restaurants are accustomed to promoting their use of organic ingredients as a marketing tool in their menus and in other forms of advertising and explicitly target consumers who are highly motivated to eat organically grown food, restaurateurs have difficulty passing along to their customers the increased expense of procuring organic ingredients. These costs include both the typical premium for relatively scarce organic potatoes over conventionally grown potatoes and the costs of transporting organic potatoes to the desired destination in smaller unit sizes than is usually required for conventional potatoes. Posted below (Figure 7) is a comparative analysis of transportation costs for potatoes shipped from the west coast to the east coast in non-bulk and bulk format, which illustrates how easily the cost of organic ingredients can escalate in relation to

conventional products because of the need to rely on transportation modes that can accommodate smaller volumes of product.

Shipping Organic Potatoes from California to New York				
<i>Estimated Transportation Cost and Time</i>				
Unit	Package	Truckload	Trailer on Railcar	Refrigerated Railcar
Volume (pounds)	10	45,000	45,000	180,000
Estimated Cost per unit	\$10	\$4,000	\$2,100	\$8,600
Transit Time (days)	4	5	4	4
Cost per pound	\$1.00	\$0.09	\$0.05	\$0.05

Figure 7. Cost of shipping, by quantity.

Source: Upper Great Plains Transportation Institute, Fargo, ND

Marketing Dehydrated Potatoes

The majority of potatoes grown in the United States is sold to processors rather than sold through fresh market channels. Fifty-seven percent are used for frozen, canned, or dehydrated products, or are made into potato chips, which requires a different logistical approach than the fresh potato market. To illustrate the logistical requirements of the processed potato markets, we have chosen to describe the operation of a dehydrated potato processor. Sales to the dehydrated potato industry comprise approximately 10 percent of the U.S. potato market, making it a good example of an important niche market outlet.

At a dehydrated potato facility, fresh potatoes are made into flakes and then sold as an ingredient to be incorporated into various further-processed food products. Because dehydrated potatoes weigh only 20 percent as much as raw potatoes, it is important to control the cost of raw materials to keep the sales price of dehydrated potatoes from becoming prohibitively high. Consequently, potatoes used for processing dried flakes are typically purchased locally to avoid excessive shipping costs, and cosmetically imperfect potatoes are often purchased because they can be procured more cheaply than higher quality products and do not affect the quality of the final dried product.

Potatoes arrive on trucks and are moved into the plant through an underground pipe. The fresh potatoes are steam peeled, scrubbed, trimmed, inspected, and sliced before being cooked. Much of the process from peeling to cooking is automated. After being cooked, the potatoes are riced and dried. When the drying is complete, the resulting paper-like product is ground into a specified size, from coarse to fine.

The final product is bagged and palletized before being moved into storage. When it is ready to be shipped to the buyer, it is loaded onto trucks in bags or into tank railcars in bulk. Domestic deliveries are usually shipped by rail in tank cars using pneumatic unloading. In addition, some bagged product is shipped by truck to bakeries or food manufacturers to be used as an ingredient in such food items as pizza dough and soup.

The remaining dehydrated potato flakes are exported to foreign—mostly Asian—markets in 22- or 50-pound bags. Intermodal container terminals are used for these export shipments. A common route for dehydrated potatoes from Grand Forks, North Dakota, includes trucking the bagged dehydrated potatoes to Winnipeg, Manitoba, followed by shipping them from Winnipeg to Vancouver by rail, and then shipping them by ocean vessel to an Asian port.

Marketing GMO-Tested Potato Products for Export

Because niche agricultural products often command a hefty premium compared with undifferentiated products, customers for niche products typically have substantial leverage in getting their precise specifications met. As previously mentioned, these specifications may range from adherence to a particular set of growing and processing methods (confirmed through inspections), to customized product formulations and packaging, strict segregation of product in the distribution process, and—most recently—tests for genetic purity.

In the case of dehydrated potato products, for example, much of the demand for exports is generated by customers in Asian countries. As a rule, these customers prefer to purchase food ingredients that do not contain GMOs. To ensure these specifications are met, suppliers of dehydrated potatoes to Asian markets typically send their products to domestic laboratories for testing and confirmation that they are free of GMOs before shipping them overseas.

Testing potato products for the presence of GMOs prior to export has become common practice in the past few years, following several incidents in which shipments of U.S. dehydrated potato flakes destined for the Japanese food manufacturing market were rejected on arrival after traces of GMOs were detected. Not only were the suppliers of the dehydrated potato flakes unable to transact their sale, they had to pay to have the flakes shipped back to the United States for disposal. The combined transportation costs for sending the potatoes to Japan and then back to the United States, coupled with the loss of income from the expected sale of a premium product, amounted to substantial losses for the vendors. In addition to the financial loss, the mistakes undermined the Japanese customers' trust in U.S. suppliers of processed potato products, and damaged a major market outlet for U.S. producers.⁸

Shipping Alternatives

Suppliers to niche agricultural markets typically send products to intermediate buyers and end users by truck, ocean container, or package carrier service. The decision to use a particular service provider depends on the quantity to be shipped, the distance it has to travel, and the flexibility of the customer regarding its arrival time. Although these shipping alternatives are more expensive than shipping in bulk, research has shown that buyers are usually willing to pay higher prices for niche products that meet their specifications, a factor that helps to defray the differential in shipping costs.

⁸ "Snack recalls exacerbate biotech fuss," *Reuters*, June 23, 2001. Available from Ag BioTech InfoNet <http://www.biotech-info.net/biotech_fuss.html>.

Transportation arrangements for niche agricultural products may be made directly with the carrier or through a third-party organization, such as a shippers association or freight forwarder that handles transportation arrangements on behalf of the supplier. Businesses that manage their own freight arrangements typically select a carrier based on the scheduled delivery time for the cargo, the carrier's reputation for reliability, the cost of shipping, and its proximity to the carrier's collection facility.

Businesses specializing in supplying small volumes of niche agricultural products might consider using a third party to arrange reliable and cost-effective transport for many reasons. Transportation, especially for high-volume and international markets, is complex, often requiring multiple carriers in a sequence of transport services. For businesses not familiar with shipping, it may be advisable to rely on a service provider to make transportation arrangements, especially for businesses that routinely ship less than a full truckload or container load. By turning to a third-party logistics expert that handles multiple shipments of comparable products to the same destination, a firm can expect to reduce costs through load consolidation.

Third-party organizations such as shipper associations, freight forwarders, and non-vessel operating common carriers (NVOCCs) will arrange transport and customs clearance for small businesses. These organizations allow small shippers some economies of size, and provide expertise in negotiating rates and service terms and in managing international transportation.

Resources for Marketing Niche Agricultural Products

Agricultural producers and processors new to the world of niche marketing, or who are exploring the possibility of entering the niche market arena, will find these resources useful.

Marketing

- *Direct Marketing* <<http://attra.ncat.org/attra-pub/PDF/directmkt.pdf> (PDF)>, produced by Appropriate Technology Transfer for Rural Areas, a national sustainable agricultural information service funded by USDA's Rural Business-Cooperative Service, offers case study examples for developing and assessing niche product market plans.
- *Diversify Your Wheat Markets: How To Establish Identity-Preserved Markets Using Containers* <http://www.ams.usda.gov/tmd2/SD_Wheat/index.htm> and <<http://www.ams.usda.gov/tmd2/IPWheat/index.htm>> are proceedings from two conferences cosponsored by USDA's Agricultural Marketing Service and the Idaho, South Dakota, and Washington Wheat Commissions. They present an overview of the opportunities and challenges producers face in shipping their grain in containers.

Value-Added

- *Value Through Verification*
<<http://www.ams.usda.gov/nop/NOPPresentation/Introduction.html>> contains a brief overview of the National Organic Program administered by USDA's Agricultural Marketing Service, including information about production standards, product labeling, and the certification process.
- *Program Standards* <<http://www.ams.usda.gov/nop/NOP/standards.html>>, located on the USDA Agricultural Marketing Service web site, provides links to detailed descriptions of USDA requirements for producing, handling, and labeling organic food and fiber products, as well as a description of the organic certification process and Federal accreditation process for organic certifying agents.
- *USDA Process Verified Program* <<http://processverified.usda.gov/>> explains how agricultural businesses can document compliance to International Standards Organization (ISO) 9000 production, manufacturing, and delivery standards through third-party audits. (Additional information on third-party audits is also available from the audit section of *Supply Chain Basics: Strengthening Vulnerabilities in the Food Supply Chain*.)

Transportation and Logistics

- *Identity-Preserved Grain Logistical Overview*
<<http://www.ams.usda.gov/tmd/IPGrain/index.htm>>, a collaborative report produced by staff at USDA's Agricultural Marketing Service and the Upper Great Plains Transportation Institute, contains identity-preserved grain market examples, containerized grain industry trends, and general logistical information that provides a basis for understanding marketing niche grains in containers.
- *Agricultural Export Transportation Handbook*
<<http://www.ams.usda.gov/tmd/export/index.htm>>, produced by USDA's Agricultural Marketing Service, is a general resource on agricultural transport processes and best practices. It should be useful to both new and experienced agricultural exporters.
- *Recipe for Export Success: A Brief Tutorial for New Exporters*
<http://www.fas.usda.gov/agx/basics/tutorial_body.asp?content=xml/tutorial_welcome.xml>, produced by USDA's Foreign Agricultural Service, introduces new businesses to the export process. It may be useful in gathering initial information and developing an export strategy for a niche agricultural product.
- *Protecting Perishable Foods During Transport by Truck*
<<http://www.ams.usda.gov/tmd/TruckHandbook.pdf>> (PDF) and *Tropical Products Transport* <<http://www.ams.usda.gov/tmd/Tropical/index.htm>>, handbooks developed by staff at USDA's Agricultural Marketing Service, offer practices, technologies, and regulations in handling and transporting perishable agricultural products.
- *Directory of Freight Forwarders Serving Agricultural Shippers*
<<http://www.ams.usda.gov/tmd/freight/index.htm>>, developed by USDA's Agricultural Marketing Service, contains a comprehensive database of

participants in the North American freight forwarding industry, organized by location and area of specialization. The database provides several options for searching for information by keywords.

- *Directory of Shippers Associations* <<http://www.ams.usda.gov/tmd/Shipping/contents.htm>>, developed by USDA's Agricultural Marketing Service, provides contact information for shippers' associations (nonprofit membership cooperatives that make arrangements for domestic or international movement of members' cargos), with a brief overview of their functions.
- *Preparing an Export Price Quotation* <<http://www.asbdc.ualr.edu/BizFacts/5005.asp>>, produced by the Arkansas Small Business Development Center, provides a succinct overview of the components of the landed cost of an exported farm product.

Transportation Rates

All of the publications listed below are produced by USDA's Agricultural Marketing Service, unless specified otherwise.

- *Fruit and Vegetable Market News* <<http://marketnews.usda.gov/portal/fv>> includes several weekly market reports on transportation rates, product prices, and sales volumes for fruit and vegetable products, ornamental and specialty crops, and farmers markets.
- *Grain Transportation Report* <<http://www.ams.usda.gov/tmdtsb/grain/>> is a weekly report of volume and rate information for barges, railroads, trucks, and ocean vessels involved in the transport of grain.
- *Agricultural Containers Indicators* <<http://www.ams.usda.gov/tmd2/agci/>> provides information on general trends related to the rates, volumes, and capacities for containerized shipments of agricultural products.
- *Ocean Rate Bulletin* <<http://www.ams.usda.gov/tmd/Ocean/Index.asp>> is a quarterly summary of rates and service terms for high-value, containerized agricultural shipments to several Asian markets and a few European markets.
- *Agricultural Ocean Transportation Trends* <<http://www.ams.usda.gov/tmd/AgOTT/index.htm>> is a semiannual report on agricultural ocean container shipping, including trends and market news that can provide valuable resources for negotiating rate and service terms in container service contracts and for monitoring market events.
- *Transportation for USDA Commodities* <<http://www.fsa.usda.gov/FSA/webapp?area=home&subject=coop&topic=trs>>, produced by USDA's Farm Service Agency, lists requirements for truck, container, rail, and ocean vessel carriers handling USDA shipments.
- *GIPSA Inspection and Weighing Requirement Waived for Containerized Grain* <<http://www.setonresourcecenter.com/register/2005/Apr/28/21921A.pdf>>. The USDA provides a waiver from official inspection and weighing for most high-quality grain export container shipments.

Other Transportation Links

National Package Carrier Rates

- DHL <<http://www.dhl.com/splash.html>>
- Federal Express <<http://www.fedex.com/>>
- United Parcel Service <<http://www.ups.com/>>
- U.S. Postal Service <<http://www.usps.com/>>

Truck Rates

- USA Trucking Companies <<http://www.ezfreightrates.com/>>
- Freight Center <<http://www.freightcenter.com/>>
- Fleet Directory <<http://www.fleetdirectory.com/>>
- Yahoo! Trucking Companies Directory
<http://dir.yahoo.com/Business_and_Economy/Business_to_Business/Transportation/Trucks/Trucking/>

Class I Railroad Rates

- BNSF <<http://www.bnsf.com>>
- Canadian National <<http://www.cn.ca/>>
- Canadian Pacific <<http://www8.cpr.ca/>>
- CSX <<http://www.csx.com/>>
- Kansas City Southern <<http://www.kcsi.com/>>
- Norfolk Southern <<http://www.nscorp.com/>>
- Union Pacific <<http://www.up.com>>

Glossary

- Commodity** Although it can refer to anything that is bought and sold, the word is usually applied to raw materials, especially products of agriculture and mining. It applies primarily to undifferentiated products, in which all products in that group are essentially the same and have the same value. Commodities are sold by price only. Wheat is a commodity, whereas organic wheat is a differentiated product. Commodities are usually handled in bulk lots in the supply chain, with materials from various sources mixed together.
- Logistics** The flow of goods from the producer of raw material to the final consumer. At its most basic, agricultural logistics deals with transporting input materials to a farm and agricultural products to the market. At a more refined level, it deals with the organizing of that transportation so the right amount of raw materials arrives at the right time, and the flow of product moves to its destination smoothly, efficiently, and inexpensively, incurring as few storage costs as possible along the way.
- Niche Marketing** Providing a product or service that is not being supplied by traditional products or services.
- Niche Markets** Those markets with too small a capacity to serve with bulk commodities. A niche market is defined by customer demand not met by the mass commodity market.
- Supply Chain** The progression of events, often carried out by different companies, that leads to the delivery of a product to the final customer. An agricultural supply chain may include such activities as producing raw material, transportation, warehousing, processing, wholesaling, and retailing.
- Supply Chain Management** Coordinating the movement of goods along the supply chain. Supply chain management focuses on planning and communication, usually through computers and the Internet. Its goals are to reduce costs and inventory, and improve customer satisfaction. Effective supply chain management synchronizes supply with demand to enable just-in-time delivery.
- TEU** Abbreviation for Twenty-foot Equivalent Unit, a standard measure of container capacity, often used in shipping. Although containers are available in several sizes, this term and FEU (Forty-foot Equivalent Unit) are used to standardize discussions of capacity. A TEU is a volume 20 feet long, 8 feet wide, and 8½ feet high, or 1,360 cubic feet.
- Transload** To move a cargo from one mode of transportation to another, as from a truck to a train or barge. Transloading bulk grain products often takes place at grain elevators.

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