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Organic Feed Grain Markets: An Analysis of Structure, Organization, and Potential for Virginia Producers

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Organic food sales have seen rapid growth in the United States, with an average of 20% annual increase in sales over the past ten years. While fresh fruits and vegetables constitute the largest organic food sector, the organic meat, poultry, and dairy industries are also experiencing rapid expansion. The Southeast has historically been a marginal producer of grains; however, there are increasing opportunities to grow feed grains for organic meat, poultry, and dairy farmers in the Southeast and Mid-Atlantic due to growing demand for these products in regional markets. This paper analyzes the potential organic feed grain market for organic dairy production within Virginia. Two major emerging markets for organic feed grains are for organic dairy and poultry markets. Most organic grain is direct-marketed to livestock producers or to area feed grain processors. Diverse types of grain are demanded, including corn and soybeans; minor grains such as barley, triticale, sunflower, and field peas; and bulkier items such as haylage, baleage, and silage. The area's supply of organic feed grain is largely brought in from the Midwest or imported. High fuel prices enhance local competitiveness. Contractual relations, either formal or informal, dominate. The nature of direct-marketing relationships with buyers means that a diversity of logistical services might be sought. Price information is difficult to obtain and of limited reliability.

Organic food sales have seen rapid growth in the United States, with an average 20-percent annual increase in sales over the past ten years. While fresh fruits and vegetables constitute the largest organic food sector, organic meat, poultry, and dairy industries are experiencing particularly rapid expansion—organic dairy markets have experienced increases of approximately 20 percent per year (Born 2005). Growing demand in these organic market sectors opens opportunities for organic feed grain growers throughout the United States, particularly for grain growers located near meat, poultry, and dairy producing areas (Born 2005).

The Southeast has historically been a marginal producer of grains within the conventional grain market and reflects this tendency in the organic grain market as well. Only four percent of organic corn and 10 percent of organic soy comes from the South, making it second lowest in production after the Northeast (Born 2005). However, there are increasing opportunities to grow feed grains for organic meat, poultry, and dairy farmers in the Southeast and Mid-Atlantic due to growing demand for these products in regional markets.

Recently, several large organic dairy processors have located in and around Virginia in order to meet growing demand for organic dairy products (Womack 2005). These dairy processors, such as Organic Valley, Horizon, and H.P. Hood, are currently importing their milk from other states as far away as the Southwest but seek local supplies of organic milk for their processing operations.

Organic poultry markets are also expanding rapidly—combined with livestock, they have recently seen growth rates of 78 percent between 2003 and 2004 (Born 2005). Most of the feed grain in the South is used for poultry and is imported from the Midwest. Approximately 60 percent of United States poultry is produced in the Southeast, and therefore a significant quantity of grain is required for these areas. A shortage in regional grain availability is evidenced by the fact that organic feed grain prices in Pennsylvania and North Carolina average between 2.09 and 2.18 times the price of conventional grains, giving these states the highest organic grain costs in the U.S. (USDA 2003).

This paper analyzes the potential organic feed grain market for organic dairy production within Virginia; however the general lessons are also relevant to markets for organic poultry and other livestock. Understanding the qualifications for organic standardization, the available buyers, the market chain, and pricing is essential to making

sound decisions and profitable investments in any market. The impetus for research is the realization that growing markets for organic meat, poultry, and dairy offer opportunities for the production of high-value inputs to support their production. A limited supply of organic grains is recognized as one of the primary impediments to the expansion of these markets.

The National Organic Standard

The high value of organically produced food originates from the intensive farming methods and therefore needs to maintain that value by identifying the production processes and maintaining its organic identity and integrity during post-harvest processing, transport, and marketing. Historically, diverse standards and certification regimes for organics existed in the United States to meet this need. In 2002, however, the National Organic Standard (NOS) was promulgated by the U. S. Department of Agriculture (USDA) in response to perceptions that the plethora of organic standards and certification regimes were impeding the growth of the organic market by confusing consumers and discouraging firms' entry into the organic market. The NOS created a single nation-wide standard, requiring certification of adherence for any food sold as certified organic in the United States. Some of these regulations include that 95 percent of all artificial and other non-organic practices are prohibited under the regulation for goods to be labeled "certified organic." If goods are produced with compliance to 80 percent of the organic standards, the product can be labeled "made with organic ingredients."

There are four components to getting and maintaining organic certification: a successful transition from conventional to organic land resources, adherence to appropriate production practices, documentation of production practices, and assurance that the organic integrity of a farmer's product is maintained by requiring that inputs and post-harvest practices also adhere to appropriate organic guidelines.

Demand for Organic Feed Grains

Buyers

Two dominant markets for organic feed grain are emerging in the Southeast: organic dairy and or-

ganic poultry. In Asheville, NC, Harrisonburg, VA, and Winchester, VA, large organic dairy processors have obtained organic certification for milk-processing plants and are seeking local producers to provide organic milk to these plants. Much of the milk brought to these plants is imported from other states—according to Peter Miller, Northeast Regional Manager for Organic Valley, one plant ships milk from as far away as New Mexico (Miller 2006). As farmers adopt organic production methods in Virginia and surrounding states such as North Carolina and Pennsylvania in order to supply these plants, more organic grain will be demanded in order to meet the needs of the farms' production. A representative of one of the country's largest organic milk processors said that "the key to southeastern organic dairy success is local organic feed production."

Organic grain tends to be direct-marketed. Organic grain producers can sell grain directly to dairy, poultry, or other organic livestock producers as well as to organic feed grain processors that operate in close proximity. Organic grain processors—for example, Countryside Natural Products in Virginia and Creamer in Pennsylvania—are importing most of their grains from the Midwest or abroad, and key-informant interviews indicate their interest in purchasing organic feed grain locally to diversify and ensure supply and reduce transport costs.

Types of Grain Demanded

Conventional dairy farmers typically use a corn-soybean mix to meet the energy-protein needs of their herds. As conventional dairy farmers convert to organic, they will most likely begin with similar production systems, stimulating demand for organic corn and soybeans in the local market. As new organic dairy farmers gain experience and see the effects of the organic production on their herds, feed regimes can evolve to include different grain mixes that are easier for the cows to digest, resulting in better herd health and increased longevity (Miller 2006).

This evolution in dairy-production systems means that demand for alternative grains such as barley, triticale, sunflower seed and meal, and field peas is likely to emerge in addition to demand for corn and soybeans. The establishment of stable rotation patterns that include these alternative grains

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can enhance profitability and help farmers to secure markets for these diverse grains well in advance of the crop's harvest. There are also opportunities for producing organic haylage, baleage and silage, all of which tend to be marketed locally because of their bulk and sensitivity to transport and handling conditions.

There are two determinants of feed rations that organic grain farmers should take into consideration: the amount of pasture that cattle are fed in a region and for whom the dairy farmer works. Organic dairy farms are affected by both their available income and resources but also by the philosophies of what farming and business practices different dairy-processing agencies prefer. Figures on the current and potential number of animals and their grain requirements are not available (though they are currently being researched).

The Organic Marketing Chain

There are significant differences in the structure and behavior of organic grain markets. These are discussed here with specific reference to supply structure, relationships between buyers and sellers, prices and pricing information, quality, logistics, and services sought in the market. The role of the "organic price premium" in the evolution of the market is also considered.

Supply

Interviews with organic grain-industry actors reveal that most organic grain currently used in the region is brought in from the Midwestern states or imported. Nationwide, the country imports eight times more organic grain than it produces, with about 80 percent of the imports coming from China and about 20 percent from South America (Clarkson 2006). With current high fuel prices, the transport prices of these imports are a major determinant of the total cost to processors and farmers. High fuel prices enhance the relative competitiveness of Virginia's organic grain producers to regional organic processors and end users.

Relationships and Contracts in the Organic

Market

Organic and conventional grain markets behave very differently. Producers' marketing, price, and risk-management strategies within organic grain markets should take into account these differences. The primary difference results from the fact that conventionally produced grain is a commodity, and organic grain is a high-value product. Conventional grain markets amass the product of many producers and coordinate the availability of this product with the demand of many buyers. Prices adjust to match the volume supplied with the volume demanded. Producers base their production decisions on both current and anticipated prices.

Organic grain markets, on the other hand, have fewer buyers and sellers, resulting in more market risks of sales and purchases left to the open market—the entry or exit of one buyer or seller could have substantial effects on prices in the market. Moreover, with fewer buyers and suppliers, buyers are likely to try to arrange their supply well in advance, further reducing the pool of potential buyers of grain on the open market. Finally, tools such as futures and options do not exist to help producers manage price risk in organic grain markets.

Another major difference between conventional and organic grain markets is how prices are formed and how supply and demand are coordinated. Conventional grain markets are coordinated almost entirely by price currently that is, producers base their production decisions on the price they expect to receive by looking at current and projected prices. In contrast, organic grain markets are much less dependent on price for matching supply and demand. While price expectations play an important part of farmers' production decisions, direct relationships with buyers provide farmers with information about specific needs and are often accompanied by contracts, leaving open-price systems playing a marginal role.

Given these issues, buyers and producers tend to seek to make arrangements well in advance of their actual need. Prior arrangement of transactions means that contracts and informal agreements between buyers and sellers predominate in these markets. Contracts and informal agreements can also help to protect buyers and sellers from price, production, and market risk. Factors such as a buyer's and producer's familiarity with one another,

distance between point of production and point of sale, volumes and services sought, and frequency of sales all affect the extent to which contracts are advisable.

Quality

Beyond the requirement for certification of the use of organic production methods, quality requirements for organic grain are similar to those for conventional grains (Miller 2006). Issues such as grain humidity levels, grain size, and the presence of mold or aflatoxins are important issues; likewise, the grain must be free of pathogens, fungi, and impurities. At this point, however, quality requirements for organic feed grain are not as stringent as they are in organic food grain markets.

Logistics and Service

In direct-marketing relationships, the producer takes responsibility for the functions that are performed by an intermediary in conventional market contexts. Many of these functions relate to services such as cleaning and screening, bagging, storage, and delivery. Service after the sale, such as responding to buyers' questions or complaints about quality or delivery conditions, is key to the continued success of a direct-marketing relationship. Though these services do not significantly change the physical nature of the grain, they add value by transforming the product to meet the needs of the buyer.

Organic grain farmers may also be asked to provide storage services, particularly if selling direct to livestock, poultry, or dairy farmers rather than to grain processors. Not all buyers have storage, and not all can buy several tons of grain at one time. However, providing storage can offer producers the opportunity to provide an important service and/or speculate on price movements for organic grain that is not previously committed (Rzewnicki and Hamilton 2005).

Transportation cost varies among each of the grains. Grains containing more water, such as corn, and forage cost more to transport because of their weight, volume, bulk, and sensitivity. Growing small grains may be more cost-effective after transportation cost is included into the budget (Miller 2006). Transport prices form a major determinant of the total cost of organic grain to processors and dairy farmers. Current high fuel prices enhance

the relative competitiveness of Virginia's organic grain producers. In the short to medium term, the cost competitiveness of Virginia's producers will depend heavily on their production costs and transport costs, particularly fuel.

Prices & Pricing Information

Organic grain prices are currently at a premium, reflecting the high costs of acquiring grain from outside the region and the lack of supply to meet current demand. In coming years, the continued expansion of the organic dairy, poultry, and meat sectors is expected to keep demand strong.

In general, organic grains trade at between 1.5 and 2.2 times conventional grain prices (Hungerford 2003). Prices for grains are highest in Pennsylvania and Virginia, where they are more than double the price of conventional grains. This is likely due to high demand, low production of organic grain in the region, and high transportation costs to move grains from the Midwest to the farms. Specific pricing information is very difficult to find and is generally not representative of the entire market. The lack of reliable local price information has several dimensions. First, no public system for the collection and dissemination of prices for organic grain exists. Data on many transactions is never revealed due to non-disclosure practices, and even that which is revealed might not be useful without knowing the specific grain quality and services that were part of the transaction and reflected in the price. Second, the low volume traded through an open-market system means that available prices likely do not reflect local market conditions.

Any pricing information about the market that is given is offered freely and is not mandated by any agency or the government (USDA 2003). Prices can be found by calling buyers of organic grains and asking their willingness to pay, looking up prices of feeds, or looking online to resources such as The Rodale Institute's *The New Farm* (<http://www.newfarm.org>). Virginia producers should be cautious in using price information available from other regions to form expectations of prices in Virginia because organic grain markets are highly subject to local conditions.

Evolution of the Market

It is also important for producers to keep in perspective the "organic price premium." The organic price premium can be seen from two perspectives, consumer and producer. The concept of the premium means totally different things to each. Consumers view the organic price premium as the difference between organic and conventional products, generally without having any sense of the value or cost incurred in producing organics. To producers, price premiums exist in markets where supply is short and reflect what buyers are willing to pay to acquire the grain they need. As supply expands, the increasing availability of organic grain can cause prices to fall, reducing or even eliminating the premium that producers receive, even though consumers will still perceive it to exist because the organic cost will still be higher than that of the comparable conventional product.

Conclusion: What Does the Market Look Like for Virginia?

Significant opportunity exists to produce organic grains to supply organic dairy producers and other quickly expanding organic sectors such as poultry and meat. Nevertheless, the transition to organic grain production involves costly investment, so the medium- to long-term potential of the market should be considered when making the decision to enter into production. The success of the organic grain market will depend on the continued success of these buyers, as well as organic grain producers' ability to compete with other regions that produce grain and can ship it into the region. Currently, demand is growing more quickly than supply, resulting

in significant price premiums, but over the medium to long term an increase in the number of producers will cause the organic price premium to erode as supply increases and prices fall. At the same time, high transport costs enhance the competitiveness of local organic grain production.

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