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MARKETING OPPORTUNITIES FOR ORGANIC AND NON-GMO CROPS

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Introduction

According to the USDA Economic Research Service, Iowa ranks fifth in the U.S. in terms of organic production acres (USDA-ERS, 2004). The U.S. organic industry continues to grow at a rate of 20% annually (OTA, 2004) and is currently a $13 billion industry. Projected growth puts U.S. organic sales at $20 billion by 2006. There were approximately 100,000 acres of organic production reported to the Iowa Department of Agriculture and Land Stewardship (IDALS, 2003). This figure reflects only acreage reported by those farmers who returned their survey; thus, more acres are believed to go unreported. This increase in organic acreage represents a four-fold increase since 1993. The organic industry is a consumer-driven market based on consumers’ belief that organic products are safer for human consumption and beneficial to the environment (Bourne, 1999). Researchers have found 52% more conventional produce on U.S. supermarket shelves containing pesticide residues compared with the organic produce (Consumers Union, 1999). What is driving the growth of organic products in the European Union and Asia is a uniform dislike of genetically-modified organisms (GMOs) in food (OTA, 2004).

The National Organic Program of the USDA Agricultural Marketing Service developed national organic standards starting in October 2002 (USDA-AMS, 2004). Certified organic producers are required to undergo third-party certification prior to reaping the premium price of organic products. Certification will verify that synthetic chemicals, including GMO seeds, have not been used for a minimum of 36 months prior to harvest.

Certified Organic Production

With the increasing consolidation of farms, and monopolization of farming inputs (e.g., seed and pesticide packages), farmers will succeed only if they assume more control of inputs and prices (Harl, 1999). Organic producers are engaged in both strategies. More knowledge-based skills are required for organic crop monitoring (Putnam, 1990). The goal of a sustainable, organic farm is complete reduction of external inputs, using instead, on-farm sources of compost for fertilization and non-toxic (biological, mechanical and cultural) methods of pest management. Most organic farmers rely on crop rotations, compost or manure applications, and/or cover crops to maintain soil fertility (Kelly, 1990).
Weed control practices include cover crops, mulches, crop rotations, biological control, smother crops, inter cropping, high plant populations, and tillage operations (Markey, 1990).

**Iowa State University Organic Research Results**

Iowa State University made a commitment to addressing the research and extension needs of organic farmers through the establishment of the ISU Neely-Kinyon Long-Term Agroecological Research (LTAR) site. The Southeast Research and Demonstration Farm in Crawfordsville and the Muscatine Island Research and Demonstration Farm have also served as sites for organic research. The LTAR site is entering its eighth year as an experiment comparing organic and conventional grain production. An example of the success of the organic system, demonstrating statistically equivalent yields in the organic and conventional system, is shown in Table 1. The organic system that contains two years of alfalfa has consistently out-produced the organic system with only one year of alfalfa. In seven years of the experiment, organic field corn and soybean yields have been similar in both systems. Economic returns have been greatest in the organic system (Delate et al., 2003). Soil quality has also remained high in both systems, with no detrimental effect on soil carbon levels from tillage operations in the organic system (Delate and Cambardella, 2004).

**Table 1.** Organic and conventional grain yields, N-K LTAR, 2004

<table>
<thead>
<tr>
<th>Crop</th>
<th>Rotation</th>
<th>Yield (Bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>Conv. C-S</td>
<td>198</td>
</tr>
<tr>
<td>Corn</td>
<td>Org. C-S-0/A</td>
<td>178</td>
</tr>
<tr>
<td>Corn</td>
<td>Org. C-S-0/A-A</td>
<td>200</td>
</tr>
<tr>
<td>Soybean</td>
<td>Conv. C-S</td>
<td>38</td>
</tr>
<tr>
<td>Soybean</td>
<td>Org. C-S-0/A</td>
<td>43</td>
</tr>
<tr>
<td>Soybean</td>
<td>Org. C-S-0/A-A</td>
<td>42</td>
</tr>
<tr>
<td>Soybean</td>
<td>Org. S-Wheat</td>
<td>40</td>
</tr>
</tbody>
</table>

**Marketing Organic and Non-GMO Grains**

The majority of organic crops are grown for human consumption because of the price premium associated with foods versus animal feed, although the organic livestock market is growing and organic feed grain demand has been increasing dramatically in recent years. Organic price premiums average 57% over conventional prices (Bourne, 1999), but premiums can range from 20 to 400%, depending on season and availability. Many organic farmers have entered into alternative marketing streams, through exclusively organic cooperatives, alliances or designated organic and non-GMO buyers. However, the organic supply chain must become more efficient if it is to keep pace with demand.

Compared to the more unified conventional grain supply chain that is characterized by convenience, the organic supply chain is fragmented and inconvenient in almost all aspects. For example, conventional growers have ready sources of seed, inputs, transportation, delivery points and financing. In contrast, organic producers must rely on a shrinking number of seed sources, limited inputs, long transportation links leading to a relatively small number of available delivery
points. Farm financing, though increasingly available, is often not well understood by the providing institution. This lack of understanding is a direct function of the opacity of the organic market when compared with the conventional market simply because there is no larger market, such as the Chicago Board of Trade, that can provide liquidity and risk sharing. In order to take full advantage of the consistent market growth, organic producers must devise ways to integrate production, transportation, delivery and financing in an efficient manner.

The need to increase production/transportation efficiencies is even more pressing with the entry of large, well-capitalized companies such as Dean Foods and General Mills. If organic producers fail to take this phenomenon into consideration, these companies will likely source product from lower cost areas.

The entry of large companies into the organic market has led to the consolidation of many industry segments. For example, Dean Foods' purchase of White Wave and Horizon Dairy consolidated the largest organic soy milk producer and organic dairy. However, since the organic industry is still in its infancy, there exists market segments that have little or no penetration. As a result producers have a large number of opportunities to fill the demand in these areas.

By crafting a more efficient system, producers will not only drive down costs and increase returns, but will also create a more stable system. The existence of stability will induce more producers to enter the organic market and create more opportunities to work towards common goals.

Building an efficient system is much like examining the five critical area of a supply chain: 1) Planning; 2) Sourcing; 3) Delivering; 4) Rejecting. Of the five, planning is the initial and perhaps the most critical to the organic producer. The paramount decision a potential organic producer must address is their tolerance of risk, beyond that inherent in agriculture. Once the producer decides they are willing to accept a relatively high level of risk, a marketing strategy must be decided that addresses all the crops in the rotation. This strategy must include the organic certification agency because the type of certification may affect the markets available. Due to their limited number, locating seed sources must also be addressed in the planning stage. Field issues, such as pest control and harvest protocols that avoid cross-crop and GMO contamination must also be considered. The producer must also determine whether the crop must be sold immediately or if it may be stored without risking significant crop degradation. Finally, the plan must include contingencies to account for rejections, be it for quality or GMO contamination. Although GMOs are not allowed in organic production some level of contamination is sometimes found. The buyer will determine the level tolerance for such contamination.

The execution of even the most well conceived plan is often very difficult. This is especially so in agriculture where the uncertainties of weather and a new market can lead to frustration. However, it is notable that the organic market is a demand-pull market, in which the consumer is leading the way. As a result, the producer has the assurance that, given proper planning, there will be a premium market available for an appreciable period of time.

The non-GMO grain market is a loosely defined market that is limited to food grade soybeans and to some extent, food grade corn. Within this market will be found conventional producers and those transitioning to organic production.

The last two years have seen an explosion in the demand for conventional non-GMO soybeans
fueled by the FDA allowing processors to make a health claim on a retail label and the widely publicized health benefits of soy. Today, companies such as Cargill have premium non-GMO programs that service the soy derivative market, such as so y concentrates and soy isolates. In addition to this relatively new market, conventional non-GMO soybeans remain in demand for more traditional uses such as tofu, soy flour, soy protein and soy milk, both domestically and internationally. As is the case with organic soybeans, premiums are variety dependent.

The market for conventional non-GMO corn is highly local and commands little if any premium. Food grade milling corn is usually required and producers within a relatively small radius can fill the demand.

The non-GMO market is very instructional for the producer interested in transitioning to organic production because it introduces the grower to many of the same entities found in the organic market. Additionally, the emphasis on delivery of crops that conform to contractual specifications is also useful as they become more critical in the organic market. Like conventional non-GMO soybeans, the premium available for transitional organic soybeans is dependent upon the variety and the market. For example large seeded, clear hilum, high-protein soybeans have the greatest premium potential. Organic transitional corn does not generally command a premium.

Another emerging market is that for low linolenic soybeans. Because it is now widely recognized that consuming an overabundance of trans-fatty acids carries a health risk, there is an effort to at least inform the public about the presence of these substances in the food that is sold in the grocery. This will be done via labeling which will appear in 2006. The low linolenic soybean yields oil that is very low in trans-fatty acids and will be used as a substitute for regular soybean oil. At this time a number of entities, including Iowa State, Monsanto and Pioneer are offering seed that will yield oil to service this market.

There appears no indication in the foreseeable future that the demand for Organic and non-GMO grains is diminishing. As a result, there exists opportunities for the organic, conventional and organic transitional producer to capture the premiums associated with such markets. However, along with the reward is the risk and careful consideration must be made of all factors involved in the production, harvest, storage and delivery of the product.

References


IDALS (Iowa Dept. of Agriculture and Land Stewardship). 2003. Annual Survey on Organic Production, Des Moines, IA.


