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The Identity-Preserved Grain Market

The U.S. grain market is enormous. U.S. farms produced 298 million metric tons of grain in 2002, with 27 percent or 81.2 million tons going to export.

But foreign competition, government regulation, and more specific consumer preferences have combined to make some fundamental changes in this huge market and to create new challenges for American farmers and processors. Countries that were once importers of American grain production are now competitors, exporting grain on their own. Meanwhile, the mass-commodity style of grain production, so long the mainstay of American agriculture is now becoming inadequate to meet the highly differentiated demand profiles of 21st-century consumers and government regulators.

Countries such as India, China, and Russia (in the form of the Soviet Union) were once big buyers of American farm output. The rise of capitalist-style economies in these and other countries has served to increase farm output efficiency to the point that not only do these countries produce enough grain for their own consumption, but they actually have become net exporters, in competition with American farmers. This competition has been driving down the per-bushel price of standard grain products, putting American farmers and their processing partners under severe economic pressure.

The solution adopted by many farmers has been to shift production to specialized grain products that can demand higher prices because of special, high-demand attributes in for specific markets. Consumer preferences and government regulation are demanding high degrees of labeling and differentiation in what used to be bulk commodities.

Due to consumer preferences and economic requirements, food processors have grown increasingly demanding in the specifics of the agricultural materials they use to achieve greater consistency and particular characteristics in the consumer products they make. A cookie manufacturer, for example, may specify a particular type of wheat and even particular farming methods in order to achieve desired performance in taste, baking characteristics, durability in shipping, and shelf life in the grocery store.

At the same time, government regulation and consumer protection policies are driving ever-more complex labeling of food products. Decades ago, labeling was confined to descriptions of flavor and perhaps a sign of USDA inspection. Today, food products carry labels with ever-increasing detail about nutritional value and the characteristics of the ingredients. This requirement has prompted food processors and manufacturers to be more detailed in their specifications for the agricultural products they buy.

A dramatic example of this regulation is the treatment of genetically modified organism (GMO) products. Genetic modification has shown great success in producing more resilient crops with specific qualities and GMO grain has become widespread in the United States. Yet many consumers and regulatory agencies worldwide, concerned that genetically engineered organisms might have as-yet unknown ill effects on human consumers, seek to identify and control GMO products in the food supply. Many retailers decline to stock GMO foods, charging a premium for certified non-GMO products. Moreover, the European Union restricts GMO content in foodstuffs and requires traceable proof that shipments of grain have GMO content of less than a fraction of a percent.

This overall trend toward growing and delivering more specifically defined (and authenticated) farm products is known as "Identity-Preserved" (or IP) agriculture. It is perhaps the most important, sweeping trend in agriculture today and it calls for highly partitioned farming, transport and processing procedures so that the product characteristics can be isolated and preserved from specific farm acreage to final

packaged product. This trend is also creating challenging domestic transportation problems for the grain shipper.

The transportation problem

But the nature of IP agriculture runs directly counter to the traditional approach to transporting bulk agricultural products such as grain. Traditionally grain goes by truck from the farm to a local grain elevator, usually operated by an agricultural cooperative or a food processor, where it is held for shipment in high capacity rail hopper cars to markets in the United States or abroad. Grain from different farms usually is mixed together at the elevator, maintaining general consistency of the type and grade of grain, but not preserving the identity of the particular crop and the growing methods used. The grain then goes to market as a commodity, losing whatever additional value it might have as a differentiated product with specific characteristics. This system is highly efficient for bulk product shipments, but very unattractive for identity preserved or high-value market demand.

In cases where identity preservation is important, shipment in containers is the preferred mode. There are two problems with this approach in most agricultural producing hinterlands. First, there are no intermodal terminals, and second, as a result, access to intermodal terminals is only possible with long-haul highway travel. An alternative solution is to ship bagged product in rail boxcars, and when the boxcar nears an intermodal hub or port, transload the bags from the boxcar to the container. This process of transloading to containers introduces the possibility of having other grain mixed in, of damaging the product, of moisture, and other problems that compromise the identity and value of the product. Either way is expensive and makes U.S. IP growers less competitive in the world export market.

Containerization is particularly valuable for exports, since the overwhelming majority of all international merchandise trade is shipped in containers, which can be loaded on rail cars, ships, or highway vehicles. The use of standardized containers has created a highly efficient system of moving cargo using different modes of transport throughout the United States and internationally. It is known as

“intermodal” transportation. Since the US has a well-documented trade imbalance in which imports exceed exports by a factor of two, over half the containers returning overseas are empty. This results in favorable shipping rates for containerized grain export from almost any port, but especially for Asian destinations.

The intermodal solution

The most efficient method for transporting IP grain would be for farmers to load IP grain into standardized containers at the farm or at a local grain processor. This would allow farmers to maintain the authenticated identity of the grain all the way to its destination, when the containers are unsealed at the food processor’s or manufacturer’s plant. It also would reduce costs and transport time, since it would stay in the same standardized container throughout the intermodal transport system, whether on rail, ship, or barge.

The problem is that farmers have no way of getting a container directly from the farm into the intermodal transport system. There are not adequate intermodal facilities in the interior that constitutes America's great economic agricultural engine. The relatively few intermodal terminals are located in big cities near rail terminus points and ports, far from the grain-producing farmland. These intermodal terminals are generally hubs attracting large numbers of shipping transactions. In order for an intermodal facility to operate profitably it typically must handle nearly 100,000 container transactions, called "lifts."

RailRunner

RailRunner solves the problem of intermodal access with its RailRunner system and Terminal Anywhere™ technology. The RailRunner system is based on a specialized chassis that can carry a standardized container on either a roadway or a railroad. Thus a truck carrying a standardized container can be loaded at the farm with grain grown to meet particular specifications and sealed on the spot to preserve its identity. That container can then be trucked to a nearby RailRunner

Terminal Anywhere yard at a rail siding, where, with no specialized container-moving cranes, the chassis and container can be placed on the rails for shipment elsewhere in the United States or abroad.

With RailRunner's flexibility and low capital investment, economic intermodal operation is possible at much lower transaction volumes in locations that reach deep into the agricultural heartland. RailRunner terminal operation can be established in local railroad yards, on rail sidings or added to rail served grain elevators or processing plants. A RailRunner train can be assembled close to the source of production and transported to a traditional intermodal center.

In the end, RailRunner can provide the farmer, processor, shipper and buyer traceable assurance that their product has been identity-preserved from source to destination at a competitive transportation cost, thus offering vast opportunities for growth in the market for identity-preserved grain.

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