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Legal Obligations and Potential Market Impacts Associated with Biotech-Enhanced Seeds Producing Grain Not Approved for Import into U.S. Export Markets[1]

Introduction

Syngenta Seeds Inc. has launched a new biotech-enhanced corn seed called Agrisure Duracade™ 5307 for planting in the United States in 2014. As of May 1, 2014, this trait has not been approved for import as food or feed by significant U.S. export markets, including China, the 28 countries of the European Union (EU), Colombia, Switzerland, Brazil, Egypt, India, The Philippines, Indonesia, Thailand, Singapore, the Russian Federation, Kazakhstan, Belarus or Turkey. Like the United States, a number of these countries (including China) have a zero-tolerance policy regarding the presence of unapproved biotech-enhanced traits in imported shipments.

The costly trade disruptions and commodity price impacts that can result were spotlighted when China in mid-November 2013 began rejecting shipments of U.S. corn and distillers dried grains with solubles (DDGS) after detecting the presence of Syngenta Seeds' Agrisure Viptera™ MIR 162, which has not received import approval yet. Some U.S. soybean shipments to China also were effected when trace levels of MIR 162 were detected.

This recent experience demonstrates how access to international markets for U.S. farm products can be disrupted or prevented when biotechnology-enhanced crops are commercialized before regulatory approvals are granted by importing countries.

1. *How much did these export market disruptions with China cost U.S. farmers?*

An analysis completed in early April 2014 by the National Grain and Feed Association (NGFA) estimated that the total economic damage of Syngenta's commercialization of Viptera MIR 162 prior to Chinese import approval – and the trade disruptions that ensued after China detected MIR 162 and rejected shipments under its zero-tolerance policy – ranged from **$1 billion to $2.9 billion**. Using a mathematical model that forecasts the

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national average corn price based on U.S. corn ending stocks, NGFA estimates that the trade disruption:

- **Depressed U.S. corn prices by 11 cents per bushel**. That amounts to a **$1.144 billion loss for U.S. corn growers** over the last nine months of the 2013/14 marketing year (December 2013 to August 2014), as the United States in effect was shut out of the Chinese corn market.

- **Depressed U.S. DDGS prices by an estimated $7 per metric ton**, resulting in a $202 million loss for this sector during the current marketing year.

- **Depressed U.S. soybean prices by an estimated 15 cents per bushel**, amounting to a $375 million loss for soybean farmers during the current marketing year.

Importantly, these cost impacts do **not** reflect likely losses of U.S. corn export sales to China that otherwise could have occurred in 2013/14 were it not for the Viptera MIR 162-related disruption in shipments and sales.

2. ***What costs could be borne by U.S. farmers and the grain industry from commercialization of Duracade 5307 since it has not been approved yet in several key U.S. export markets?***

NGFA conducted a second analysis that found the estimated cost of the **disruption to U.S.-China trade alone** resulting from commercialization of this new corn trait could range from **$1.2 billion to $3.4 billion (with a mid-point estimate of $2.3 billion)** for the 2014/15 marketing year. This analysis is predicated upon the belief that enforcement of a zero-tolerance policy by China will prolong the lack of access for U.S. corn to that important market for the duration of the 2014/15 marketing year (which runs from Sept. 1, 2014 to Aug. 30, 2015). China's regulatory process typically takes at least two years to review and approve new biotech-enhanced traits following approval by the United States.

The NGFA analysis assumes the same price-depressing impacts will occur for U.S. corn, soybean and DDGS as determined in the Agrisure Viptera MIR 162 case study. For Duracade 5307, most of the economic loss would be borne by U.S. corn producers ($1.538 billion), with most of the remainder falling on soybean farmers ($533 million) and DDGS sellers ($270 million). These cost impacts were derived after accounting for an estimated $64.9 million in economic benefits associated with commercialization of Duracade 5307 in terms of increased corn production resulting from improved rootworm control, as well as profits for Syngenta, its seed licensees and seed resellers.

3. ***How long did Syngenta wait to obtain Chinese import approval of Duracade 5307 before deciding to sell it for planting in the United States? Is Duracade being sold or planted in Canada this year?***

Syngenta waited less than a year to commercialize Duracade 5307 in the United States after receiving U.S. regulatory approval for cultivation and planting. This occurred prior to obtaining many import market approvals. China's biotech regulatory-approval process starts after the commodity is deregulated or approved in the exporting country (in this case, the

United States), and as noted previously normally takes at least two years to complete. In some cases like China, commercializing this quickly does not provide even the minimum amount of time under its regulations to consider import approval.

The United States is the ***only*** corn exporting country in which Duracade 5307 is being launched in 2014. In contrast, in a March 10, 2014 NK update from Syngenta Canada Inc., it announced it would ***not*** proceed with commercial sale of Duracade hybrids for planting in 2014 in Canada. It instructed that any seed containing Duracade that had been shipped to Canada "cannot be sold," and that "arrangements for immediate returns will be made." The Syngenta Canada notice specifically referenced the lack of import approvals for Duracade in China and Europe, stating: "***Accordingly, we want to ensure the acceptance of any trait technology grown in Canada meets end market destination requirements.***" *[Emphasis added.]*

4. *Hasn't Syngenta entered into an agreement with Gavilon Grain LLC to assist in marketing Duracade 5307? Won't this prevent Duracade 5307 from getting into export markets where it's not approved?*

Syngenta has stated that Gavilon Grain LLC will accept grain containing Agrisure Duracade 5307 at "market price while providing stewardship and distribution services" for producers who are not able to find another market outlet for their harvested crops.

But given the zero-tolerance policy for unapproved biotech-enhanced traits enforced by China and other foreign countries, there are no guarantees – despite best efforts – that some level of Duracade 5307 will not become present in U.S. corn export shipments. The expansive geographic area in which Duracade 5307 seed is being marketed, the number of acres and producers believed to be involved in planting such seed, and the potential for pollen drift, cross-pollination and commingling make achieving a zero tolerance virtually impossible. In fact, private tests conducted when Viptera MIR 162 was commercialized showed a significant risk for low-level detections of that trait in corn harvested from fields where it was **not** planted.

Further, neither Syngenta nor Gavilon have said they will be financially responsible for economic losses if Duracade is detected in U.S. shipments to export markets for which it is not approved. [See question #5.] The combination of these factors adds a significant element of market risk that exporters evaluate when making individual company decisions on whether to market U.S. corn, co-products and other commodities to such foreign markets.

5. *What has Syngenta stated about the obligations and liabilities of growers if they choose to plant Agrisure Duracade corn in 2014?*

Syngenta says it will require growers to sign a Stewardship Agreement. One of the "grower responsibilities" contained in that agreement states that "the grower agrees to channel grain produced from seed products (whether corn or soybeans) to appropriate markets as necessary to prevent movement to markets where the grain has not yet received regulatory approval for import."

The grower agreement also contains a section entitled "General Provisions," which includes language under which the grower consents to understanding that "grain harvested from corn hybrids containing the Agrisure Technologies and DAS Technologies, or soybean varieties containing the Genuity RR2Y Technology or LibertyLink Technology, may not be fully approved for all grain exports markets."

Further, in a March 11, 2014 letter to member companies of the NGFA and North American Export Grain Association (NAEGA), Syngenta wrote that, "**the grower remains responsible for planting, harvesting, and stewardship of seed and grain, just as members of the grain handling industry purchasing grain and reselling it remain solely liable for any risks or liabilities arising from their commercial activity.**" *[Emphasis added.]*

In several meetings with NGFA and NAEGA officials, Syngenta representatives have rejected direct requests to bear commercial responsibility (financial liability) if and when Duracade 5307 is detected in U.S. export shipments to countries where it is not approved for import.

6. *How much U.S. corn was disrupted by the detection of Agrisure Viptera MIR 162 in U.S. shipments?*

NGFA's analysis found that aggregated data supplied by U.S. exporters showed that between mid-November 2013 and March 2014, a total of 3.327 million metric tons (131 million bushels) of U.S. corn were subjected to either rejected or diverted shipments, or to canceled or deferred sales. In addition, trace levels of MIR 162 were detected in several U.S. soybean shipments to China, which caused those shipments to be detained.

7. *How big of an export market was China expected to be for U.S. corn before these trade disruptions occurred?*

The U.S. Department of Agriculture (USDA) forecasts that China will become the world's largest corn importer by 2020. China is projected to increase its corn imports to 22 million metric tons (866 million bushels) by 2023, up from 2.7 million metric tons (106 million bushels) in 2012. For 2013, USDA had projected that the United States would export 37 million metric tons (1.457 million bushels) of corn, and that China would import an estimated 7 million metric tons (276 million bushels) – virtually all of it from the United States. But U.S. corn shipments to China reported on an aggregated basis by U.S. exporters totaled only 1.23 million metric tons (48 million bushels) at the time the United States was effectively shut out of the Chinese market following the detections of MIR 162 in U.S. shipments.

Exports also are extremely important to U.S. soybean growers. USDA projects that 48 percent of the entire 2013 U.S. soybean crop will be exported, with nearly two-thirds of total U.S. soybean export sales for the 2013/14 marketing year destined for China.

8. *What kind of communications might be useful now between corn sellers and buyers?*

NGFA encourages corn buyers and sellers in the value chain to communicate concerning any limitations or restrictions buyers may have on accepting biotech-enhanced traits that do not have certain export market approvals. Each company will make its own independent business decisions in this regard based upon its market opportunities, market risks and other factors. For this reason, different companies or facilities may have different policies. For example, some companies or facilities may be unwilling to accept biotech-enhanced traits that are not approved in U.S. export markets because of the importance of international trade to their business or to U.S. facilities to which they sell. In other cases, facilities that may be willing to accept biotech-enhanced commodities that do not have export market approvals may want sellers to communicate in advance which loads have those traits so the facility can take steps to segregate and attempt to keep the product from entering export markets for which they are not approved. In still other cases, a company or facility may be located in an area dominated by domestic uses of corn (such as livestock feed markets) where traits unapproved for export markets can be utilized.

Farmers also are encouraged to read and fully understand Syngenta's grower agreement, and the legal obligations that apply to farmers planting and harvesting Duracade 5307.

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About National Grain and Feed Association (NGFA): The NGFA consists of more than 1,000 grain, feed, grain processing and grain-related companies that operate approximately 7,000 facilities that handle about 70 percent of all U.S. grains and oilseeds. NGFA's membership includes grain elevators; feed and feed ingredient manufacturers; biofuels companies; grain and oilseed processors and millers; exporters; livestock and poultry integrators; and associated firms that provide goods and services to the industry. Also affiliated with the NGFA are 26 state and regional grain and feed associations.

The NGFA strongly supports agricultural biotechnology and other scientific and technological innovations that contribute to efficient production and availability of a safe, abundant, affordable, high-quality and sustainable food and feed supply for U.S. and world consumers. In this regard, the NGFA is working in tandem with the North American Export Grain Association, agricultural producer and commodity organizations, biotechnology providers and the seed industry in striving to improve the timeliness and synchronization of U.S. and foreign governmental approvals of biotech-enhanced traits.