

INTERNATIONAL TRADE IMPLICATIONS OF BIOTECHNOLOGY

**David Hegwood
O'Mara and Associates
Washington, DC**

Abstract

Genetically enhanced crop varieties grown in the United States have encountered problems in foreign markets as a result of both regulatory hurdles and lack of consumer acceptance. The key to addressing these problems is developing confidence in the safety of the technology and the effectiveness of the regulatory systems.

Introduction

Genetically enhanced cotton varieties were first planted in commercially significant quantities in the United States in 1996. Producer acceptance of the technology has been so great that by 1999 nearly 60 percent of cotton acreage was planted to genetically enhanced varieties. The rapid adoption of biotechnology as a tool of modern agriculture in the United States has been possible in large part because of the existence of a rational, science-based regulatory system. This, unfortunately, is not the case in most of the rest of the world. Public opposition to biotechnology and regulatory hurdles to the approval of new genetically enhanced varieties, which are linked in some countries, are a threat to the U.S. biotech cotton crop. Exports of fiber, meal, and oil are jeopardized by the growing opposition to biotechnology.

A Regulatory Problem and a Consumer Problem

When the first commercial crops of genetically enhanced cotton, corn, and soybeans were planted in 1996, the European Union (EU), Japan, and a handful of other countries required advance approval of the new varieties before they were permitted to be imported for planting for food or feed purposes. Today, roughly one fourth of the countries in the world have some type of regulation in place for agricultural products derived from biotechnology. Most regulatory regimes are concerned with either the release of genetically modified organisms (GMO) into the environment (e.g., seeds for planting) or the safety of an agricultural product derived from biotechnology which is to be used for food or feed. The list of countries requiring advance approvals for new varieties expands every year.

Until 1998, regulatory issues created the most significant problems affecting international trade in genetically enhanced bulk commodities. However, beginning in 1998, interest

groups opposed to biotechnology captured the public's attention in Europe. With environmental scare tactics and campaigns against " Frankenfoods", these groups succeeded in generating enough public concern about biotechnology to force both the marketplace and governments to react. European officials intensified their efforts to put a mandatory labeling regulation in place. Retailers responded by demanding GMO-free food products. Eventually, the public opposition to biotechnology forced a *de facto* moratorium on approval of new genetically enhanced crops. The public concern has spread to other countries, including the United States by some accounts, though nowhere has the reaction been as virulent as in Europe.

The Regulatory Environment

Most national regulatory regimes consist of a review of environmental issues and a review of food and/or feed safety issues. The time lag between the commercialization of a new variety in the United States and approval of that variety by other countries has been the source of most of the trade problems for bulk commodities containing GMOs. There are several varieties of corn, for example, that have been in commercial production in the United States since 1997 but that are still awaiting approval in the EU. As a result, U.S. exports of corn to Europe have come to a halt because no shipment of corn from the United States can meet the EU's zero tolerance for unapproved varieties.

For genetically enhanced cotton varieties, the time lag from commercialization in the United States to approval in overseas markets has not created a problem for exports of fiber, cottonseed meal, or cottonseed oil. Environmental reviews are concerned with material containing DNA that can reproduce. Therefore, an environmental review would typically only apply to cotton seeds for planting. Shipments of cottonseed oil and cottonseed meal would be subject to food or feed safety reviews. More and more countries are requiring such reviews, but to date they have not created any significant trade problems for cottonseed oil or meal. However, the EU is developing a new regulation governing Novel Feeds which could affect exports of cottonseed meal to Europe.

Labeling

The EU passed mandatory labeling requirements for GMOs in June 1998. Since then, a number of other countries have begun moving in the same direction. Japan recently approved a mandatory labeling regulation to take effect in 2001. Australia, New Zealand, and Switzerland are in the process of developing regulations, and countries such as Thailand, Korea and Brazil are considering the issue.

The trigger for labeling in the EU regulation is detectability of the modified DNA or a novel protein. Given current testing standards, cottonseed oil and processed food products containing cottonseed oil would not be subject to labeling in the EU. The Japanese regulation also excludes vegetable oils from labeling. However, as testing methods improve, the exclusion of vegetable oils in the future cannot be guaranteed.

Mandatory labeling of foods and food ingredients containing or derived from GMOs would impose tremendous costs throughout the food chain. A recent report prepared for the Australia/New Zealand Food Authority estimates that the cost could be about 3 percent of the annual turnover of the food industry. Most of the additional costs are related to transportation, storage, handling, and compliance. In addition to the added cost, mandatory labeling risks creating a false impression that food products derived through biotechnology are not safe.

Given the extra costs and the potentially negative consumer reactions, the likely response for many food manufacturers would be to avoid using food ingredients containing GMOs wherever possible. In fact, there is anecdotal evidence that this is already happening. Perhaps the most notorious recent example is the announcement by Gerber that it would stop using GMO ingredients in its baby food products. Gerber's announcement came in response to inquiries from Greenpeace, but it is indicative of the way food companies will react if they expect the public to reject products labeled as containing GMOs.

International Trade Rules

International trade rules are most effective at disciplining the actions of governments, not private firms or individuals. In the context of biotechnology, this means that trade rules can provide some disciplines on regulatory decision-making processes. However, they will have little impact on demands in the market place for GMO-free products.

World Trade Organization

The World Trade Organization (WTO) Agreement on Sanitary and Phytosanitary Measures (SPS) applies to measures taken to protect the life or health of humans, plants, or animals. Although the applicability of the SPS Agreement to GMO approval decisions has not been tested by a dispute settlement case, there is little reason to doubt that it would apply in most circumstances. The SPS Agreement requires approval decisions to be made on the basis of sound science and after the performance of a risk assessment. Therefore, a country could not refuse to allow imports of GMOs simply because of consumer opposition.

The SPS rules are critical to preventing unjustified restrictions on trade in commodities containing GMOs.

However, they do not adequately address all of the potential trade problems. One of the most significant shortcomings of the SPS Agreement is the lack of specific time limits for completing risk assessments. Some products that have been in commercial production in the United States since 1997 are still awaiting approval in the EU. Nevertheless, it is unlikely that risk assessment time limits will be agreed to in the next WTO round. Few countries would be willing to subject their regulatory systems to internationally negotiated time limits.

Labeling regulations are subject to the provisions of the WTO Agreement on Technical Barriers to Trade (TBT). The TBT rules prohibit discrimination in the treatment of products based on their country of origin. The impact of labeling on consumer acceptance is not a concern addressed in the TBT Agreement.

Codex Alimentarius

The Codex Alimentarius Commission establishes international standards, guidelines and recommendations concerning food safety. Codex standards play an important role in international trade because of the linkage between Codex and the WTO SPS Agreement. A national SPS measure based on a Codex standard is presumed to be based on sound science. In June 1999, Codex established a new committee to examine the need for international standards and guidelines for food products and food ingredients developed from biotechnology. The development of Codex standards for GMOs would be an important step toward harmonization.

Codex is also attempting to develop guidelines for labeling food products or ingredients derived from biotechnology. Two options are under consideration. Under the first option, which is supported by the United States and a few other countries, labeling would be required only when there is a substantial change in nutritional value, composition or intended use. Under the second option, labeling would be mandatory for all foods derived from biotechnology. The standards adopted by Codex will undoubtedly be followed by a large number of countries.

Biosafety Protocol

Negotiations for a Biosafety Protocol (BSP) were launched in 1994, after the entry into force of the United Nations Convention on Biological Diversity. The stated objective of the BSP negotiations is to develop procedures for the safe transfer, handling and use of living modified organisms that may have an adverse effect on biological diversity. However, many countries want to expand the scope of the negotiations to develop new trade rules for commercially-produced genetically-engineered crops. The proposals supported by a majority of countries would create new rules for international trade that are inconsistent with the WTO SPS Agreement in that decisions would not have to be made on the basis of

sound science. The United States has joined with a number of major exporting countries, including Canada, Argentina, and Australia, to oppose these proposals, but it is not clear if their opposition will be sufficient to prevent the conclusion of a Protocol that will impose significant new restrictions on trade in bulk commodities.

Looking for Solutions

No single measure will provide a solution to all of the problems plaguing international trade in genetically enhanced crops. Ultimately, the core of the problem is public acceptance of the technology, and until the public is prepared to accept biotechnology as an essential tool in modern agriculture, we can expect the problems to continue. Harmonization or mutual recognition of GMO approval regulations would remove some of the regulatory bottlenecks and eliminate some of the problems caused by the time lag in approvals in different countries. Achieving harmonization or mutual recognition will be nearly impossible, however, until the political climate improves.

Confidence in the safety of the technology and the effectiveness of the regulatory systems is the key to public acceptance. In the meantime, we have to avoid putting in place trade rules that would discourage the development of the technology and deprive agriculture of what promises to be an immensely important and powerful new tool.

Conclusion

Cotton has escaped many of the international trade problems experienced by corn and soybeans. Since cotton products in international trade contain little or no reproducible genetic material and therefore impose negligible environmental risks, regulatory concerns have been insignificant. Similarly, since cotton products are not as widely recognized as food ingredients as corn or soybean products, they have not captured the attention of the public in a significant way. Nevertheless, the growing opposition to biotechnology poses a direct threat to the cotton industry. Unless we find a way to deal with the problems we face, the further development of biotechnology could be halted for many years. The potential benefits of biotechnology – for the environment, for meeting world food needs, for improving human health and nutrition – are too important and should not be allowed to fall prey to unjustifiable fears.