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Remarks By
Carole L. Brookins
Chairman and CEO
World Perspectives, Inc.

BIOTECHNOLOGY AND INTERNATIONAL TRADE ISSUES

Biotechnology: Information and Communication

In discussing the challenges facing biotechnology in agricultural trade, I want to begin with the subject of the information technology revolution. You might think that this is a strange point of departure, but it has EVERYTHING to do with the ability to use biotechnology processes in agricultural and food production and to market those products in national and international markets.

Let's begin with the definition of "information".

According to the Webster's Dictionary, "Information" is "...the communication or reception of knowledge or intelligence." When we talk about today's information technology revolution, we are referring to the computer age that has made globalization a reality and that has accelerated in a quantum leap the accessibility of the same information virtually instantly anywhere in the world.

This information revolution has created a true "global village". The information media creates both consumer markets and consumer perceptions. The technology for "transmitting" that information has been changed dramatically from earlier periods when we sent communication across the world in sailing ships or carried letters and news between towns or across continents on horseback. In recent years, during my own lifetime, we've advanced our communication technology from the telegram to telex/teletype to fax machines, and now to email...and I'm not that old! The media has changed from "newsreels" that we saw in motion picture houses and radio broadcasts to television satellite transmissions, and now to global, instantaneous, inter-active connectivity using broadband digital signals. We can now buy food off the "web," electronically we can connect agricultural buyers and sellers, and we can get information about our food products from television and internet sites.

Information comes to the global village through a process that we know to be "communication." "Communication" means simply "...the technology of the transmission of information."

Now, here's where biotechnology and agriculture come together in this information technology revolution. Because the same technology revolution that has transformed communication in modern information technology has transformed genetic "communication" in biotechnology. For a biochemist, a gene is simply the "information" that a cell needs to synthesize a protein. With

computer technology, the scientist is better able to understand the gene's information and to simulate what precise changes mean.

Agricultural biotechnology is no more nor less than the same technology that is used to develop life-saving and disease-fighting pharmaceuticals, to manufacture a laundry detergent that effectively dissolves grease, or to produce the liquid crystals in a computer display unit. Other specific examples include: insulin, tissue plasminogen, rennet for cheese, silk, leather, methane, biodegradable plastics, industrial solvents and lubricants.

Yet, there is no sharper contrast today in terms of public information than the widespread international acceptance of biotechnology's benefits in pharmaceuticals and industrial products, and the widespread international fears of biotechnology's dangers in agriculture and food production.

The demonization of ag biotech as "frankensteins foods" of ag biotech production as a potential environmental "apocalypse" has permeated the media. Opponents of biotechnology in the agro-food chain have effectively used the communication tools of the information technology revolution to shape opinions. In fact, they have built their assault around the term "GMO" as a virtual poison label, demanding GMO labeling (GMO meaning "genetically-modified organism") and leading a call for products guaranteed as "non-GMOs" or "GMO-free".

In truth, there are NO living organisms on planet Earth that are "non-GMO's". All plants and animals are genetically-modified organisms--including homo-sapiens--either through random or selective breeding.

But, the terms of "GMO" and "Non-GMO" continue to shape the marketplace and consumer perceptions. The results of this communication campaign has been to legally block, or de facto restrain the introduction of biotechnology into the agricultural and food product markets. And, most importantly, to isolate biotechnology in agriculture from all the many other accepted applications currently in use throughout industry and society.

Agricultural Biotechnology: Trade Costs, Trade Impacts

The battle launched against agricultural biotechnology is challenging and blocking the growth of international trade in two ways:

1. Raising commercial impediments and costs; and
2. Constructing a myriad of legal and regulatory hurdles to commerce.

I. Commercial Impediments and Costs

The myriad of "labeling" laws and consumer-driven labeling demands related to agricultural commodities and derived food products has created both higher risks and higher costs to producers, processors and retail merchandisers.

On one hand, U.S. regulators have to date held to a policy on "labeling" that was set by the Food and Drug Administration (FDA). FDA policy is that biotech products must be labeled if they contain transferred allergens or altered nutritional values. FDA has not yet developed other labeling guidelines. U.S. industry supports voluntary labeling, as long as it is "truthful" and is not misleading to consumers.

On the other, Japan and the EU are approaching "labeling" based on consumer choice and the consumer's right to know.

It all sounds pretty simple, but the current "labeling" regimes based on "consumer's choice" is creating tremendous barriers to introducing new biotechnology seeds and marketing biotechnology agricultural and food products. In fact, a recent report noted that biotechnology companies are bringing fewer new crops to the U.S. government's approval process (only six new submissions in 1999 and four of them were withdrawn) – the fewest since 1993.

First, there is the farm price return. Who will bear it? Are consumers willing to pay a premium for "non" BT corn or Round-Up Ready Soybeans? Or are farmers going to get lower prices, through a discount paid to them for biotechnology-enhanced crops? In today's market, BOTH situations are occurring. For example, U.S. grain traders said that the premium for non-biotech U.S. grain since harvest rose to a high of around 10 cents/bushel in late Fall/early Winter and has since worked back down to 5-8 cents/bushel.

Second, there is the cost of logistics. Segregating "GMO" and "Non-GMO" commodities creates tremendous new challenges and cost burdens in the movement of commodities from the farmer to the processor and end-user. Moreover, certification of bulk commodities in the existing marketing system is extremely difficult and costly when considering that the risk of contamination must be outweighed by the premium to be earned. While Japanese food processors estimate that costs for non-biotech commodities are rising substantially, European contacts say that no one except the Nordic countries are willing to pay a premium. One exporter said that the combination of paperwork burden and segregation costs on a shipment of non-biotech soybean meal he sold to Italy cost more than the \$25/ton premium he received. In fact, he said he had "a room full of paperwork for one single 10,000 ton shipment!"

Third, there is the risk of compliance and viable certification that can lead to costly litigation. Existing testing procedures for biotechnology are imperfect at best, take time to perform and add costs to the marketing chain. There needs to be agreement between buyers and sellers about what type of test should be used. There are other tests but at least three main ones are notable:

1. Near-Infrared (NIR)
2. Polymerase Chain Reaction (PCR)
3. Genetic Protein testing

More importantly, a reasonable tolerance must be established, with reasonable being something greater than the one- percent level announced by the EU.

And, fourth, there is both confusion and legal risk in labeling. A Wall Street Journal article (October 26, 1999) pointed out the confusing decisions being made on labeling bioengineered food.

According to the reporter in Britain who investigated supermarket practices since a labeling law went into effect in March 1999, "...the new law hasn't exactly made things easier for discerning shoppers. Rather, it has spawned a bewildering array of marketing claims, counterclaims and outright contradictions that only a food scientist possibly could unravel."

Specific controversies were sited dealing with cheese enzymes, soya protein, food additives and veterinary medicines.

Product liability and the cost of potential litigation are and will create additional barriers to trade.

Trade already has been directly interrupted. The delay in approving new corn varieties under the European Union (EU) Novel Foods Directive has prevented the annual shipment of \$200 million worth of corn. Overall U.S. corn sales to Europe are down more than 97 percent compared to the same time last year. Efforts by Japanese beer brewers and soy sauce makers to go biotech free will also likely affect U.S. sales. Meanwhile, consumers in Europe express concerns about biotech but U.S. biotech soybean varieties have already been approved for entry into the EU and trade has been down but not out.

II. Constructing Legal and Regulatory Barriers to Trade

The world is awash with international interventions designed to regulate trade in biotechnology products. In fact, there are so many different venues for setting standards that we are likely to create an Ag Biotech "Tower of Babel"

OECD: Working Group studying the food safety implications of biotechnology (per G-8).

Codex: Safety, nutrition and labeling aspects.

Transatlantic Economic Partnership Analysis of U.S. & EU environmental regs.

Biosafety Protocol: Control of biotech trade and includes Clearinghouse

WTO: (SPS and TBT implied coverage) Undetermined future action.

Most recently, officials meeting in Montreal agreed to a Biosafety Protocol that provides a framework for addressing environmental impacts of bioengineered products (referred to as living modified organisms or "LMOs") that cross international borders. The stated goal is protection of the environment without unnecessarily disrupting world food trade. Most importantly, that agreement includes a provision for the "precautionary principle" and for "socio economic" considerations to be taken into account in determining whether trade in such products should be limited.

While the biotech industry and many U.S. agricultural groups believe that this will not create a serious impediment to the continued advancement of agricultural biotechnology production and trade, I am not so sanguine about the limited potential for disrupting the "sound science" foundation of the WTO SPS Agreement.

Those supporting the protocol argue that the legal terms of the protocol will act as a "firewall" against more radical controls and prohibitions on the trade in all ag biotech products, and that the Biosafety Protocol will have no legal impact on the WTO obligations and rules.

The opposite view, which I support, is that the protocol could become an important legal precedent in trade disputes--a Pandora's Box that has now been opened to a whole wave of new regulatory restrictions and loopholes to the "sound science" basis for the WTO and the CODEX.

Integrating Ag Biotech into International Markets

Where do we go from here? I'd like to propose some initiatives to facilitate a balanced approach to better integrate biotechnology into global markets.

First, let's work together to agree on the testing processes used in certification of biotech products.

While we have a long way to go in harmonizing biotechnology approval processes and regulatory standard setting, we can at least reduce potential risks in trade by cooperating in developing the necessary technologies to efficiently and accurately test products derived from biotechnology. Then we should reach agreement on the use of those tests as the means to resolve disputes.

Testing procedures will be necessary to "label," segregate and maintain the integrity of identify-preserved output trait biotechnology crops in the future, as well.

Second, greater cooperation should be offered in setting standards and regulatory regimes that can be carried out regionally--apart from the international bodies where the clash between the U.S. and EU approach has created such a striking division.

For example, many APEC countries support ag biotechnology, including the U.S., Japan, China, Singapore, Malaysia, Canada, Indonesia and Australia. Similarly, leading countries in the Americas--FTAA--are proponents of ag biotechnology. If you take APEC Member Economies and the FTAA countries, you have more than 60 percent of the world's population--versus less than 400 million people contained in the EU (barely more than 5% of the world's consumers). We should be concentrating more of our efforts to build consensus on appropriate standards with those trading partners, even as we continue to fight for access and against unfair trade barriers with the EU. By focusing most of our efforts on Europe, we have lost time and credibility by letting "Eurofear" dominate the marketplace.

Third, we should work together through the World Bank and FAO to create a technology mentoring program to bring the technology and the training to developing economies.

Developing countries and lesser developed countries need assistance in understanding and properly utilizing this new technology for feeding their hungry people. A fund could be set up to finance testing equipment and appropriate technical training.

Fourth, we should use food aid monetization in country to improve the knowledge applications of agricultural technologies.

We can take the same basic models that helped developing countries adopt the practices of the Green Revolution -- such as monetization of food aid to defray costs and utilization of an extension system – to help countries adopt and properly utilize biotechnology and to bring their own products to market.

Fifth, we should be taking on the "GMO", "Non-GMO" label issue.

Biotechnology IS biotechnology--whether the products are agricultural commodities, food products, pharmaceuticals, forest products or industrial enzymes. If a label is a prerequisite because a product was derived using biotechnology, then we must end this “agriculture apartheid” and come up with a "biotechnology" process label that is universally applied to ALL products that have been produced using biotechnology process.

That would be the only way to achieve accurate and truthful labeling.

Sixth, it is crucial to establish the benefit of ag biotechnology to mainstream consumers.

We need to refocus our energies in developing biotechnology solutions to solve problems related to environmental degradation, resource constraints (e.g. soils, water, weather, energy) and to improve health and reduce human nutrition deficits.

And last, we need to understand that the biotech controversy is only one aspect of a larger public confidence problem.

The global information system has focused many aberrations in what are normally very secure food safety regimes. All of the scares on food safety issues have been magnified and heightened consumer anxiety about the adverse impact on their health from the foods they eat.

It is ironic to me that consumers rise up against biogenetically-produced, naturally-recurring hormones injected into cows that increase milk yields...but they eagerly inject themselves with “age-retarding,” wrinkle-reducing hormones.

I like to say that our job in the agri-food system is no easy task. We must meet consumers’ demands for miracle foods that are totally natural, have zero calories, zero fats and cholesterol, delicious taste, total nutrition, low price, environmentally friendly production, “green” packaging...and that guarantee perfect bodies, romance and immortality!

In closing, humor aside, our most pressing agenda is to build international consensus on the benefits of introducing many new technologies into the agri-food system. I want to end with the admonition that to succeed in this mission, we must build a **new covenant of trust** between agricultural producers and consumers.