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POLICY HARMONIZATION, CONVERGENCE , AND COMPATIBILITY ISSUES IN NORTH AMERICAN HORTICULTURE

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INTRODUCTION

The past decade has brought trade liberalization out of the shadow of debate among economists and into the glare of public opinion. In addition to the completion of the Uruguay Round of GATT and the creation of the World Trade Organization (WTO) at the international level, the 1990s have witnessed both the initiation and the strengthening of regional preferential trading arrangements. The European Union continues to struggle towards an economic union. In the western hemisphere, the NAFTA became a reality, several other regional trade agreements, such as the Mercado Comun del Sur (MERCOSUR), the Andean Pact, the Central American Common Market (CACM), and the Caribbean Common Market (CARICOM) gained renewed importance, and the Summit of the Americas resulted in 34 nations agreeing to set 2005 as a goal for hemispheric free trade.

The trend toward trade liberalization will continue to eliminate quotas, reduce tariffs and tariff-rate quotas, and thus, open many “ball parks” to the international trade game. The challenge now confronting policy makers is that of eliminating or equalizing non-tariff barriers to trade in order to develop a common set of rules by which industry participants must play the trade game. As tariffs and quotas are phased out under the provisions of NAFTA, the pressure to use nontariff barriers to protect domestic industries can be expected to increase. Thus, harmonization, convergence, and compatibility (HCC) issues will move to the center of the trade policy stage.

It can be argued that policy issues associated with HCC, which focus on often-opaque nontariff barriers, are more difficult to address than traditional trade barriers such as tariffs and quotas. This is because HCC involves a broad range of complex and interrelated issues, often embodied in domestic policies that reflect differences in national values and beliefs (e.g., environmental quality and sustainability). For purposes of perspective, policy harmonization and policy compatibility can be defined as flip sides of the same coin, while policy convergence is the rate at which harmonization or compatibility can be achieved.

The objective of this paper is to discuss the major HCC issues confronting the North American horticultural sub-sector. The following section provides an overview of horticulture and discusses some of the unique characteristics of the sub-sector that make HCC issues critical. Sections three, four and five examine HCC issues regarding sanitary and phytosanitary regulations, environmental laws and competition, and post-harvest regulations and technology, respectively. Concluding observations with respect to policy convergence, competition, and future food fights in the NAFTA cafeteria are offered in the final section.

OVERVIEW OF HORTICULTURAL SUB-SECTOR

North American horticulture represents a significant, complex, and unique sub-sector of agriculture which is both large and diverse. Horticulture is really an umbrella sector which includes an incredibly diverse collection of fruits, vegetables, nuts, ornamentals, wine, and other speciality crops marketed in fresh and various processed forms, including dried, canned, frozen and juice. In 1994, U.S. retail fresh fruit and vegetable sales alone totaled \$54.9 billion. The combined value of retail and food service fresh produce sales are estimated to be approximately \$90 billion (Cook).

The horticultural sub-sector is becoming increasingly internationalized, with significant portions of production being exported and consumption being imported. In 1995, the value of U.S. vegetable exports (all product forms) was \$2.833 billion, while vegetable imports were valued at \$2.632 billion (USDA, 1996). Furthermore, the U.S. has been a net exporter of vegetables over the 1992 to 1995 period.

The importance of the horticultural sub-sector in North America can be seen in terms of both production and trade. In 1994, the Food and Agriculture Organization of the United Nations (FAO) estimated that North American production of fruits, vegetables, and nuts totaled 84.5 million metric tons, including 2.7 million metric tons from Canada, 15.6 million metric tons from Mexico, and 66.2 million metric tons from the United States. The value of fruit and vegetable imports into Canada, Mexico, and the United States totaled US\$ 10.25 billion in 1994 (FAO). Canadian imports were valued at \$ 2.595 billion compared to United States imports of \$ 6.994 billion and Mexican imports of \$ 661 million. In the same year these three countries exported a total of \$ 9.989 billion of fruits and vegetables, including \$828 million from Canada, \$ 2.057 billion from Mexico, and \$7.104 from the United States.

Examining trade between the United States and Canada and Mexico provides an additional perspective. In 1995, the Foreign Agricultural Service of the United States Department of Agriculture (FAS) estimated U.S. imports of fresh and processed fruits and vegetables and fruit and vegetable juices from Canada and Mexico at US\$ 498 million and US\$ 1.8 billion, respectively. In 1996, U.S. exports of the same products to Canada and Mexico were US\$ 1.8 billion and US\$210 million, respectively.

Canada and Mexico are important to the United States in terms of the import and export of various categories of horticultural products. With respect to sources of 1995 U.S. imports, Mexico ranked first in fresh fruit (excluding bananas and plantains), fresh vegetables, and processed fruits and vegetables, third in fruit and vegetable juices and tree nuts, and fourth in beer and wine. As a source of U.S. imports, Canada ranked second in fresh vegetables, third in fresh fruit (excluding bananas and plantains) and processed fruits and vegetables, fifth in beer and wine, and tenth in fruit and vegetable juices.

In terms of leading markets for 1995 U.S. exports, Canada ranked first in fresh fruits, fresh vegetables, and fruit and vegetables, second in processed fruits and vegetables and beer and wine, and fifth in tree nuts. Meanwhile, as an export market for U.S. products, Mexico ranked third in fresh vegetables, fourth in processed fruits and vegetables, fifth in fresh fruit, and tenth in fruit and vegetable juices, and beer and wine, and fourteenth in tree nuts.

The uniqueness of the horticultural sub-sector is due to both its diversity and complexity. The perishability of horticultural crops, the range of climatic factors, significant vulnerability to pests and diseases, and high labor intensities and the use of migratory labor are unique in North American agriculture. Horticultural products tend to be highly perishable, often with very narrow market windows, creating several significant trade issues, including loss from spoilage, bargaining power, and transportation costs.

Horticultural products are extremely vulnerable to pests and diseases, resulting in high chemical-input costs. Consumers demand high internal quality as well as cosmetic perfection. Chemical use, chemical regulations and costs, and potential disease transmission are major trans-border issues. Most horticultural crops have high production and harvesting costs, are labor intensive and require seasonal, often migratory, labor. Many horticultural crops are perennial tree crops, requiring long-term investments. Furthermore, some horticultural crops are produced on lands which have low opportunity costs associated with the next-best agro-economic use.

Horticulture has a variety of features which combine to create a substantial risk profile. These characteristics of the horticultural sub-sector translate into unusual sensitivity to changes in import competition and regulatory environments which may be affected by policy HCC. Such vulnerability can be expected to create both economic and political challenges for the policy adjustment process.

This vulnerability has created both inter- and intra-seasonal diversification in order to manage risk and take advantage of emerging opportunities, particularly in fresh produce. Wilson, Thompson, and Cook note that the economics of climate (econoclimonics) is becoming more important in a global, industrialized agriculture as managers seek spatially-dispersed production capacity through formal and informal contracts, alliances and ownership. Thus, changes in agribusiness activities are leading the way for changes on trade policies.

While it is dangerous to generalize, many horticultural commodities have rather concentrated market structures with a core of large integrated firms accounting for a large market share using advanced production and handling technology, and sophisticated management and marketing systems. These firms tend to be vertically integrated and

horizontally dispersed, often across national borders. These firms often have large research and development budgets and ongoing relationships with downstream firms including retail food chains. Most horticultural industries also have a competitive fringe of smaller firms. These firms are often less technologically and managerially sophisticated, but lend a flavor of the small family farm to many horticultural industries. This is often beneficial in the rent-seeking process.

As trade in horticultural products has increased, issues concerning cross-border competitiveness have become more important. Cross-border competitiveness has become intertwined with trade policy in several horticultural industries (e.g. Florida tomatoes). In the horticultural sub-sector, these entanglements are particularly complex. Due to the nature of fresh, and to an extent processed, fruits and vegetables, policy HCC may be more difficult to achieve than with many other agricultural industries.

The level of emotional response in the horticultural sub-sector in response to both CUSTA and NAFTA serves as evidence of the depth and breadth of the competitiveness issue. For example, the lists of products on which tariffs are to be phased out over 10 and 15 years are dominated by horticultural crops. While the specific character of the battleground differs from industry to industry within the horticultural sub-sector, there are generalizations which can and will be made with respect to the competitive environment in horticultural product industries in Canada, the United States, and Mexico.

U.S. horticultural crops generally have not been included in traditional domestic policies featuring price and income support. Rather, the horticultural sub-sector has benefited from market-facilitating mechanisms, such as marketing orders, and import-protection policies designed to protect domestic industries from both phytosanitary and competitive threats. Tariff and Quota issues have been a major contention in the fruit and vegetable industry for a long time. Recall the great tomato war between the United States and Mexico.

As tariff and quota barriers to trade have been eliminated, or in some cases have begun their scheduled phase out over 5, 10, or 15 years under NAFTA, and as tariff rate quotas (TRQs) have been established, there have been increasing complaints as various horticultural products have experienced increased import competition. Charges of dumping and import surges have been filed in several product categories. In fact, relations across North American borders have in many cases become more contentious since NAFTA than they were before NAFTA. Key issues are the perishability of horticultural products and the price flexibilities. Products normally have a narrow market window and are susceptible to rapid price swings due to the sensitive nature of prices in most fresh markets.

As noted, policy HCC issues in the horticultural sub-sector are perhaps more difficult to address than the issues surrounding the elimination or reduction of tariffs, quotas, and tariff-rate quotas. Policy HCC issues in horticulture involve a particularly broad range of complex and interrelated issues which are viewed by firms in many horticultural industries as serious threats to both biologic and economic survival. The resulting fear, which is often justified, is very real and drives significant industry rent-seeking behavior. Thus, competitiveness issues often create barriers to policy HCC.

From the smorgasbord of possible horticultural policy HCC issues, the following have been selected for discussion: sanitary and phytosanitary regulations; environmental laws and competition; and post-harvest regulations and technology.

SANITARY AND PHYTOSANITARY REGULATIONS

Sanitary and phytosanitary (SPS) regulations are particularly important for horticultural crops. Their importance derives from the vulnerability of most horticultural products to the biologic and economic harm associated with pests and diseases. Thus, SPS regulations serve legitimate purposes in the horticultural sub-sector. SPS regulations also serve as effective trade barriers in the horticultural sub-sector. The SPS regulation drama is played out on the same world stage as import competition. This casts a shadow on the credibility of any discussion of whether SPS regulations are really necessary to protect the health of consumers and plant material. Thus, it is often difficult to separate the regulations that are necessary to protect plant and human health from the regulations necessary only to protect domestic producers from foreign competition.

It must be noted that when the biologic survival of an industry, particularly a perennial tree crop industry, is at stake, the burden of proof weighs heavily on the regulatory and scientific communities. Thus, it is easy to see why regulators tend to err on the side of caution, a position strongly supported by horticultural industry representatives. When consumers perceive that such regulatory vigor works to protect their food supply, the result tends to be strong public support for high levels of protection.

The ongoing avocado controversy between the United States and Mexico serves an example of the confluence of science, politics, and economics in producing an emotionally-charged border war. To put it into perspective, the avocado case has been a contentious issue since 1914.

In February 1997, the United States finally developed a protocol, known as a systems approach, to allow the importation of Hass avocados from the Mexican state of Michoacan into 19 northeastern States and the District of Columbia from November through February, provided firms meet certain safeguards. The safeguards include identifying host resistance, field surveys, trapping and field-bait treatments, field sanitation, post-harvest safeguards, winter shipping, packinghouse inspection, port-of-arrival inspection, and limited distribution (USDA-APHIS). While the scientific issue seems to have been settled, the California Avocado industry continues to oppose this harmonization effort in the political and economic arenas.

There are numerous examples of regulations in the horticultural sub-sector designed to protect crops from the importation of pests and diseases. Most of these SPS regulations are based on legitimate concerns, such as Caribbean fruit fly or canker in citrus, which prevent the importation of fresh fruit from various locations. While most of these regulations

are based on sound science and legitimate fears, the potential for use and abuse in the name of science is very real. It is interesting that most perceived abuse occurs when “our” products are denied entrance into “their” market.

The bottom line is that competition by any other name is still competition. As the process of converting quotas to tariffs and eliminating/phasing out tariffs under NAFTA continues, the pressure to use SPS regulations to protect domestic industries will continue to increase. One result already seen by some U.S. Animal and Plant Health Inspection Service (APHIS) inspectors in the Caribbean Basin is a shift toward a philosophy of “guilty until proven innocent.” Thus, it may become more difficult to ship fresh fruit, vegetables, and ornamentals into the United States.

This increase in import-protocol requirements in fresh horticultural products could have a significant impact on developing economies which may lack the financial and technical ability to prove compliance. Many small countries cannot afford to develop the protocols to gain approval to access the U.S. market or lack the production scale needed to prevent treatment costs from being prohibitively high.

Orden and Romano suggest that rent seeking and capture theory can be applied to the SPS regulatory arena for horticultural products. That is, when any uncertainty exists with respect to an SPS situation, the domestic industry can capture the regulatory process. This is not to say that there are no legitimate SPS concerns, but rather that well-orchestrated rent seeking can leverage a small degree of uncertainty into a large degree of protection. As in any trade matter, the importance of politics must not be underestimated.

Finally, it must be noted that the Agreement on the Application of Sanitary and Phytosanitary Measures, negotiated in the Uruguay Round of GATT, has become the overarching guide on SPS issues. The World Trade Organization’s (WTO) SPS Agreement is based on the principle of minimal interference in commerce when pursuing the objective of protecting human, animal, or plant health. Requirements are established for risk assessment, equivalency, transparency, and the separation of scientific and political decisions. Thiermann notes that the WTO principles are so significant that they will not only change the rules of the game, they will revolutionize the game itself (Thiermann, p.63). In this context, Sumner and Lee provide an insightful discussion of the potential impacts of SPS barriers in the context of empirical trade modeling, noting that SPS rules can change assumptions about a country’s supply and demand for a particular product, the size of the country, and the degree of product differentiation. The critical point of this discussion can be summarized by referencing Thiermann as follows:

“The (WTO) SPS Agreement promises to decrease and eliminate the most flagrant and unjustified trade barriers. Nonetheless, since SPS measures, in the future, will be the only way to legally regulate agricultural trade, the incentive to use them to control imports will increase. At this time, it is still easier to restrict unjustifiably, and then retreat if challenged, because other than a loss in technical and regulatory credibility, there is no real penalty for the initial barrier” (Thiermann, p.64).

Clearly, the horticultural sub-sector is the field on which this game will be played with greatest abandon.

ENVIRONMENTAL LAWS AND COMPETITION

The relationship between trade and environment has been a growing area of concern over the past decade. In part, this is because trade policy continues to be one of the most effective methods for one nation to influence the domestic policies of another nation. For centuries, countries have used trade policies to reward friends, punish enemies, and meet other political objectives. It is no surprise that environmental-lobby groups have begun to influence the trade policy process in an effort to meet their environmental objectives. Generally, environmental groups argue that international trade stimulates economic growth, which, in turn causes negative impacts on sustainability of the environment (Seale and Fairchild). Hillman summarized the implications for agriculture when he suggested that "environment is being used to characterize most everything that impinges on the production and trade of all agricultural commodities and food products." This is nowhere more true than in the case of horticulture, which relies heavily on chemical inputs in the production process.

From a competitive perspective, when a nation requires its agricultural and agribusiness firms to pay the full cost of their production and processing operations, i.e., internalize all negative externalities, these firms can be placed at a competitive disadvantage with firms located in countries which do not have similar requirements. Even in a world which is moving toward more open trading systems, agricultural industries lobby their governments to erect tariffs and other import barriers against countries with cost advantages argued to be based on unequal environmental policies. The argument is not that economically-inefficient industries should be protected, but rather that environmentally-efficient industries should be given an opportunity to compete.

It is important to remember that many of these issues are akin to *holy wars*, being fought for environmental quality. Never mind that international trade is thought by many in the economics profession to increase efficient resource use. However, the stage of economic development is an important factor in determining how environmental quality is addressed in a particular country. It can be argued that environmental quality is a normal good in relatively-developed economies and a luxury good in less-developed countries. As nations realize the income growth associated with increasingly open trading systems, the expectation is that increased attention will be given to improving environmental quality (Seale and Fairchild). In the meantime, those countries valuing environmental quality at a higher level than other countries may need to help pay for such quality.

Those who are concerned about environmental performance often seem interested in controlling both the final product as well as production, harvesting, and post-harvest handling processes. Currently, the controlling of production processes through the imposition of trade barriers is not permitted under the WTO. While GATT focused attention on product quality, there is increasing attention being focused on production and post-production processes by other institutions. The ISO-9000 standards developed by the International Standards Organization provide a well-known example. Horticultural products, particularly fruits and vegetables, are often the subject of cross-border disagreements concerning chemical use in the production process.

Differences in chemical labels as to what can be used in each country represent a significant issue in the horticultural sub-sector. For example, a chemical which is not approved for use on a particular crop in one country may be approved for use on that crop in another country. This situation results in three primary areas of concern: food safety; environment; and competition. All of these are significant issues in the horticulture.

An important example of the interface between trade, the environment, and HCC is found in the proposed ban on methyl bromide, a broad spectrum pesticide widely used in vegetable production and as a post-harvest treatment of certain fruits. In 1992, the parties¹ to the Montreal Protocol, an international treaty developed to protect against ozone depletion, agreed to list methyl bromide as an ozone depleting substance with an ozone depleting potential (ODP) of 0.7. This ODP classified methyl bromide as a class I ozone depleter. Thus, under the U.S. Clean Air Act, the production and importation of methyl bromide in the United States was banned after 2001.

Amid concerns about the impact of this ban on the competitive position of U.S. producers and exporters, the 1995 meeting of the parties to the Montreal Protocol discussed the issue. The U.S. position supported a complete global phase-out of methyl bromide by 2001. After much debate, final agreement was reached. For industrial nations, a production phase-out schedule was established whereby production would be reduced by 25 percent by 2001, 50 percent by 2005 and eliminated by 2010. For developing nations, production levels are to be frozen in 2002 at 1995-1998 average levels, and eliminated in 2010.

Recent studies (Deepak et al.) suggest that if the ban on methyl bromide becomes a reality, the competitiveness of many vegetables in Florida (especially tomatoes) will be eroded to the point of threatening the viability of the industry. How the industry will respond, remains to be seen. To date the response has been relatively muted. However, it is clear that as the effective date of the ban approaches, HCC issues will be at the forefront of discussion and debate.

The central issue with respect to environmental laws and competition is the relationship between environmental costs and competitiveness. Horticultural industries in countries which regulate the internalization of negative environmental externalities have added costs which may make it difficult to compete with industries in countries which do not address these externalities. As a result, "scientific" tariffs designed to equalize production-cost differences are still being suggested in the horticultural sub-sector, and often supported by those concerned about the global environment.

¹ Currently 160 countries are signatories to the Montreal Protocol

POST-HARVEST REGULATIONS AND TECHNOLOGY

Most industrialized countries have established grades, standards, and other post-harvest handling regulations for horticultural products. The stated reason for such regulations and standards is a quest for quality. Some regulations are designed to assure minimal internal quality, while other regulations are designed for external quality in order to prevent cosmetically-challenged products from reaching consumers. Comprehensive grades and standards are common in fresh fruits and vegetables, particularly external quality standards which require more chemical inputs in the production process. Conflicts between countries as to appropriate chemical usage are prevalent in horticulture.

A key question regarding harmonization centers on who dictates quality standards. There are variations from country to country which are shaped by consumer preferences. There is legitimate debate as to whether imports need to meet the same standards as domestic products, or whether consumers should be allowed to choose. Can we compare apples with apples? This, of course, brings the entire logic of mandated quality standards into question. It is not likely that this issue will be soon settled.

As discussed under SPS regulations, when horticultural products cross international borders, there is the issue of controlling final product quality standards versus controlling production and handling methods. Many domestic producers, and some consumers, would like to be able to regulate imports in terms of both end product characteristics and the means of production. While this an issue which will not be easily solved, it does suggest niche marketing opportunities to differentiate internationally-traded products for certain consumer segments. Future battlegrounds to watch will be fumigation and irradiation. Both of these post-harvest technologies represent explosive issues for both consumers and policy makers.

When it comes to cross-border differences in grades, standards, and other post-harvest regulations, competition is often the real issue. The Florida tomato grower-shipper petition to ban the use of the more-protective nested shipping containers by Mexican grower-shippers serves as an example. Mexican tomatoes tend to be vine ripened and more susceptible to damage during shipping than Florida tomatoes which are harvested at the mature-green stage. Thus, such a regulation would serve to improve the competitive position of Florida tomatoes relative to Mexican tomatoes. This is interesting in light of a quote by Mr. Paul DiMare, a large Florida grower-shipper, in response to the suggestion that Mexican tomatoes taste better than Florida tomatoes, "It doesn't really matter how tomatoes taste because they are condiments, seldom eaten alone" (Cooper and Ingersoll). As with SPS regulations in horticulture, grades, standards, and post-harvest regulations are subject to reciprocity and retaliation.

Policy HCC in horticulture also will be affected by biotechnology. The theory of technology waves developed by the Russian economist Nikolai Kondratieff suggests that technological innovations exhibit cycles of roughly 30 years (Drucker). Although biotechnology has existed for awhile, innovations based on biotechnology have only recently begun to appear in the market. Thus, it is possible that the peak of the biotechnology wave is many years away.

Biotechnology is expected to have a major impact on horticulture. Both climate and the ability to control pests and diseases strongly influence the geographic distribution of horticultural production. Also, as noted, SPS concerns play a major role in determining international flows of horticultural products. Biotechnology has the potential to change product definitions and the rules of the game by genetically altering the quality, size, taste, shelf-life, disease resistance, climatic requirements, and health benefits of fruits, vegetables, and other horticultural products. Competitive position can be affected by changes in product characteristics, e.g. the marketing of extended shelf life (ESL) tomatoes by Mexican grower-shippers.

Issues related to the protection of patents and intellectual property rights concerning genetic material will affect horticultural trade policies in interesting ways. Thus, significant changes in competitive advantages and resulting shifts in production and trade patterns can be expected. Fear of these changes and the sense of vulnerability in fruits and vegetables industries will continue to drive rent seeking in the trade-policy arena.

SUMMARY AND CONCLUSIONS

Policy harmonization and policy compatibility can be defined as opposite sides of the same coin, while convergence is the rate at which harmonization/compatibility will be achieved. The rate of policy convergence in horticulture depends on how the sub-sector evolves. Policy makers may wish to monitor industry changes in the three issue areas described: sanitary and phytosanitary regulations; environmental laws and competition; and post-harvest regulations and technology.

Domestic resistance to harmonization seems to be based primarily on competitive-advantage concerns. There is a great deal of fear in the horticultural sub-sector of North America. While some fear is based on perception, much of it reflects a realistic assessment of the changing trade environment and associated policy harmonization and convergence issues. The costs and benefits of developing more open trading systems are often overestimated by opponents and proponents, respectively. However, in the case of the horticultural sub-sector, it does appear that there will be losers in many fruit and vegetable industries on all sides of the border due to many of the industry characteristics discussed earlier. These losses can be viewed as signals for firms to adjust to a different economic reality. Competitive shifts may trigger a discussion of transitional compensation in extreme cases.

Intrafirm trade within multinational companies represents a significant portion of international trade. In 1994, intrafirm trade for both U.S. and non-U.S. firms accounted for 36 percent of all U.S. exports (both agricultural and non-agricultural) and 43 percent of all U.S. imports (Zeile, p. 24). In the horticultural sub-sector, international production and trade no longer involves us versus them, as now we are on both sides of the border. This trend is certain to have significant ramifications for policy HCC in North America.

The increased importance of both multinational companies and strategic alliances is expected to continue in the horticultural sub-sector. Many horticultural industries are characterized by large grower-shipper firms accounting for the majority of market share and remainder spread among smaller producers. California avocados and Florida tomatoes (top 5 firms control about 75 percent of the winter tomato market) are representative of this market structure.

Multinational linkages will blur the borders with respect to trade in horticultural products. The trend toward large multinational grower-shippers can be expected to continue and expand as a result of the demand for year-round sourcing and the need for diversification. Innovations in biotechnology will begin to significantly impact trade policies. Trade deflection, transshipments, and country of origin issues also will take on new dimensions for policy consideration given expected changes in multinational firms and biotechnology.

Trade policies will remain political, and rent seeking by horticultural lobbies will continue although some may discover there are limitations to their political capital in future trade policy negotiations. However, it is important to recognize that business activity tends to lead trade policy, rather than trade policy dictating business activity. One only has to observe investment and trade activities of multinational firms for confirmation.

Policies governing the trade of horticultural products among Canada, the United States, and Mexico are likely to converge, but what will dictate the rate of convergence? Perhaps more and better analysis, improved information, and increased communication among both industry and policy participants. Will food fights continue in the NAFTA cafeteria? Yes. Will anyone get hurt? Yes. Will we see policy harmonization in the North American horticultural sub-sector? Yes. Ultimately, the rate of convergence will be dictated by the issues discussed in the foregoing sections.

REFERENCES

- Cook, R. "The Changing Structure of Produce Marketing." *Small Farm News*, July/August, 1996, p. 6-7.
- Cooper, H and B Ingersoll, "With Little Evidence, Florida Growers Blame Tomato Woes on NAFTA." *Wall Street Journal*, 4 April 1996, p. A.1.
- Deepak, M.S., T. Spreen and J. VanSickle. "An Analysis of the Impact of a Ban of Methyl Bromide on the U.S. Winter Fresh Vegetable Market. *Journal of Agricultural and Applied Economics*, 28(1996):433-443.
- Drucker, P. F. *Innovation and Entrepreneurship: Practice and Principles*. Harper and Row, (1985) 276 pp.

- Food and Agriculture Organization of the United Nations. *The State of Food and Agriculture 1995*. GSO Agriculture Series No. 28, Rome, 1995.
- Hillman, J. S. "Nontariff Agricultural Trade Barriers Revisited" in *Understanding Technical Barriers to Agricultural Trade*. Proceedings of a Conference of the International Agricultural Trade Research Consortium. Edited by David Orden and Donna Roberts, January, 1997. pp. 1-32
- Hufbauer, G. C. and J. J. Schott. *NAFTA: An Assessment*. Revised Edition. Institute for International Economics, Washington D.C. 1993.
- McDowell, H. and S. Martinez. "Environmental and Sanitary and Phytosanitary Issues for Western Hemisphere Agriculture" in *Western Hemisphere*. Situation and Outlook Series, International Agriculture and Trade Reports, WSR-94-2, June, 1994. pp. 73-80.
- Neff, S. and M. Malanoski. "Food Industry Standards and Regulations" in *Globalization of the Processed Foods Markets*, D. R. Henderson, C. R. Handy, and S. A. Neff, editors, Agricultural Economic Report No. 742, Economic Research Service, U.S.D.A., September 1996. pp. 148-161.
- Orden, D. and E. Romano. "The Avocado Dispute and Other Technical Barriers to Agricultural Trade Under NAFTA." Invited paper presented at the conference on NAFTA and Agriculture: Is the Experiment Working, San Antonio, Texas, November 1996, 44 pp.
- Seale, J. L., Jr., and G. F. Fairchild. "Trade, Competition, and the Environment: Gridlock at the Crossroads." *Journal of Agricultural and Applied Economics*, 26(1)1994:97-107.
- Sumner, D. A. and H. Lee. "Sanitary and Phytosanitary Trade Barriers and Empirical Modeling" in *Understanding Technical Barriers to Agricultural Trade*. Proceedings of a Conference of the International Agricultural Trade Research Consortium. Edited by David Orden and Donna Roberts, January, 1997. pp. 273-285.
- Thiermann, A. "Implementation of the World Trade Organization's Agreement on Sanitary and Phytosanitary Measures: The U.S. Perspective" in *Understanding Technical Barriers to Agricultural Trade*. Proceedings of a Conference of the International Agricultural Trade Research Consortium. Edited by David Orden and Donna Roberts, January, 1997. pp. 63-68.
- U.S. Department of Agriculture. *Vegetables and Specialties Situation and Outlook Report*. Economic Research Service Report VGS-268, Washington D.C., April, 1996.
- U.S. Department of Agriculture. *Safeguards Allow Opportunity for Mexican Hass Avocado Imports*. APHIS News Release, Animal and Plant Health Inspection Service, January 31, 1997.
- U.S. Department of Agriculture. *U.S. Imports of Agricultural, Fish, and Forestry Products*. Trade and Marketing Analysis Branch/TEAD/ITP/Foreign Agriculture Service, 1996.

Wilson, P. N., G. D. Thompson, and R. L. Cook. "Mother Nature, Business Strategy, and Fresh Produce." *Choices*, Vol. 12, No. 1, pp. 18-21, 24-25.

Zeile, W. J. "U.S. Intrafirm Trade in Goods". *Survey of Current Business*, February, 1997, pp. 23-38.

