Journal of Agricultural and Applied Economics, 35,2(August 2003):313–319

Tomato Wars: A Discussion of How International Trade, Structural Changes, and Competitiveness Affect the North American Produce Industry

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The demand for a variety of fresh fruits and vegetables, including fresh market tomatoes, has increased significantly over the past decade because of greater convenience in use, improved selection, and rising health and diet concerns. As U.S. demand for tomatoes and other horticultural crops strengthens, inexperienced domestic and international suppliers believe they can compete effectively within U.S. markets. Free trade agreements have reduced monetary barriers to trade, but remaining impediments, such as institutional and competitive market constraints, represent significant challenges for southern U.S. growers. This paper discusses points addressed by VanSickle, Eastwood, and Woods concerning trade and horticultural market development.

Key Words: fruits, marketing, NAFTA, trade, vegetables

JEL Classifications: F1, L1, L2, Q17, R3

In recent years, consumers have placed greater emphasis on health and diet while also wanting to spend less time shopping for food and preparing meals. Federal agencies, private health organizations, and industry trade associations have initiated public education campaigns aimed at informing consumers about the benefits of eating more fruits and vegetables. Greater consumer awareness about health benefits associated with eating more fruits and vegetables and increased availability, greater convenience, and rising income have pushed fruit and vegetable consumption to record high levels. In total, the average American eats about 740 pounds of fruits and vegetables (fresh and processed forms), and we spend about $76 billion to purchase fruits and vegetables (Kaufman et al.). Collectively, fruits and vegetables are a small but important sector within the U.S. agricultural economy. Since 1990, U.S. fruit and vegetable per capita consumption has increased about 10% while fresh vegetable per capita consumption has risen nearly 22% (Pollack). Sustained demand growth has, of course, attracted the attention of many new domestic and foreign fruit and vegetable suppliers who believe that they can compete effectively in U.S. markets. In this session, presentations by John VanSickle, David Eastwood, and Timothy Woods provided us with their insight concerning a variety of barriers, as well as demand and supply factors

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This research was funded in part by USDA-CSREES Agreement 00-52101-9632.

The author thanks John VanSickle, Tim Woods, David Eastwood, John Penson, Jr., and the anonymous reviewers of the journal for their insight and comments.

that have influenced competitiveness and trade in the fruit and vegetable sector.

As southern U.S. growers reassess crop planting mixes to reflect reduced market opportunities for tobacco, corn, and cotton, popular press articles have noted the strong local, regional, and national demand trends that have occurred in the fruit and vegetable industry. Most recently, USDA releases and produce business articles have documented the rapid increase in availability and consumption of organically grown fruits and vegetables. Currently, relatively few southern U.S. growers obtain a majority of on-farm income from fruit and vegetable sales, but a large number of farmers grow small quantities of high-value fruits and vegetables (Estes). Significantly higher costs and significantly higher production, price, and marketing risks for fruits and vegetables compared to most agronomic crops require that growers evaluate their wealth and financial positions very carefully before committing to growing fruits and vegetables. Candid conversations with experienced fruit and vegetable producers reveals that many do not expect to make a profit every season, so it is important for perishable crop growers to manage cash inflows and outlays and to develop a detailed financial plan covering extended seasons. Fresh market tomato production is an example of the high-reward, high-risk outcomes frequently observed in horticultural crop production. Tomatoes rank among the most popular vegetables preferred by consumers; the average American eats about 18 pounds of fresh tomatoes and about 70 pounds of canned tomatoes every year (Pollack). Annual fresh market tomato per capita consumption has increased about 16% over the past decade (Lucier). Although people continue to eat more tomatoes, many other aspects of tomato demand and supply factors have changed in recent years. In addition to the traditional round, red, ripe tomato, supermarkets now stock a number of tomato varieties such as sweet grape tomatoes, roma or plum types, mature greens, vine-attached cluster tomatoes, hydroponic greenhouse tomatoes, organically grown tomatoes, cherry tomatoes, heirloom tomatoes, and colored (e.g., orange and yellow) tomatoes. In addition, a multitude of marketing approaches are used to distribute tomatoes to retail stores. Local growers often peddle heirloom, colored, and organic varieties to individual stores who prefer a specific variety for their regular customers; at the same time, the store imports cluster tomatoes from The Netherlands, hydroponic greenhouse tomatoes from Canada, and vine-ripened tomatoes from Israel and Mexico, whereas grape tomatoes can be purchased from a terminal market operator in Atlanta or Dallas. Finally, the store produce buyer also could purchase extended shelf life tomatoes from a variety of domestic and foreign suppliers nearly year-round. Similar line expansions and procurement options exist for many fruits and vegetables, such as apples, cucumbers, sweet and hot peppers, and squash.

Fruits and vegetables are expensive crops to grow, oftentimes costing nearly five to six times the total cost per acre of corn or soybeans. For example, the cost of growing one acre of fresh market tomatoes often exceeds $5,000, and net returns can range between 200 to several thousand dollars per acre (Estes and Davis). To some extent, the tomato battles are a microcosm for the broader war being staged between domestic and foreign horticultural crop suppliers, that is, a strong desire to have complete access an expanding domestic and world market devoid of trade barriers. While domestic growers want free access to foreign markets, they also lobby for additional federal, state, and local resources that will assist them in their demand-expansion and market promotion efforts. Although U.S. consumers are eating greater amounts of fruits and vegetables, the average American eats 10% fewer fruits and vegetables than the average Canadian consumer. In addition, only one in four domestic consumers eats the minimum recommended daily amount of five fruit and vegetables servings per day (*The Packer*). Although the fruit and vegetable market has expanded, industry advocates believe that additional growth in consumption must and will occur. As growers and trade associations promote greater produce consumption, it is also evident that many consumers want improved

appearance, greater variety, better taste, more convenience, year-round availability, and greater assurances about food safety, particularly concerning pesticide residues and genetically modified plants.

As the American population increases and diversifies, shoppers will continue to purchase traditional fruits and vegetables, but shoppers will also have broader tastes for new and exotic vegetables, unusual tropical fruit, ethnic foods, specialty crops, and niche items. The expansion in the variety of fresh tomatoes offered by a typical store simply parallels the expansion that has occurred in most produce departments in the United States. Today, the average number of items sold in domestic produce departments now exceeds 400, up about one third since 1994 (Calvin and Cook).

Seasonality, climatic advantages, and extreme perishability have provided comparative and competitive marketing advantages for many domestic and foreign produce suppliers. Most U.S. consumers are accustomed to buying a variety of fresh fruits and vegetables year-round but remain relatively unknowledgeable about where an item is grown. In 2002, *The Packer* reported that a majority of American consumers now want enhanced package labeling so they can know where an item was grown (country-of-origin), whether an item has genetic modifications, whether chemicals were used in production or an item was tested for pesticide residues, and what type of waxes and coatings were used from farm to retail shelf. Commodity associations such as the Florida Tomato Growers Exchange and consumer advocacy groups strongly supported provisions in the 2002 Farm Bill that required mandatory country-of-origin labeling for food and produce starting in 2004.

Trade of horticultural products remains an important element within the U.S. economy. Prior to enactment of NAFTA, Mexico and Canada were the primary trading partners for the U.S. fruit and vegetable industry. Mexico was the dominant foreign supplier of fresh fruits and vegetables, providing nearly 80% of imported vegetable volume, and Canada was the largest export market for most U.S.-grown vegetables, receiving about 70% of U.S. export volume (Donovan and Krissoff). Since NAFTA, trade has increased among the three countries, with many U.S. fruits and vegetables shipped to Canadian markets and the U.S. market serving as an attractive target for many Mexican growers. Despite the strength of the U.S. dollar relative to other currencies, the U.S. remains a world leader in the import and export of horticultural crops. Many factors influence the volume of horticultural trade, including currency exchange rates, sanitary and phytosanitary requirements, nontariff barriers, export subsidies, and the volume and availability of competing products. Despite widespread support for reductions in trade barriers and the enactment of multilateral free trade agreements, many food items remain protected by tariff, and worldwide horticultural crops remain among the most heavily protected sectors within agriculture (Donovan and Krissoff). Consumer tastes and preferences dictate that supermarkets must continue to rely on a variety of fruit and vegetable imports; concomitantly, commodity associations demand greater access into many foreign markets, especially China. Prospects for broader and more inclusive free trade agreements such as the Free Trade Agreement for the Americas (FTAA) suggest that increased fruit and vegetable trade volume is likely and inevitable (Cook).

Currently, about 20% of U.S. fruit and vegetable production is exported each year, but most industry associations believe that this amount will rise significantly over the next decade. Since 1995, fruit and vegetable trade has improved the U.S. net balance of trade because the value of U.S. fruit and vegetable exports has exceeded its import value. As the world economy slowed during the recent worldwide recession, however, the $2.5 billion trade surplus reported in 1995 had shrunk to about $250 million by early 2001 (Donovan and Krissoff). The fewer-but-bigger trend that has characterized the grower–shipper, handler, distributor, and retail sectors also favors expanded international trade, since most U.S. horticultural firms are much more familiar with global market concepts and understand the cumbersome paperwork involved in long-

distance trading of perishable products. Thus, many sectors and regions (but certainly not all) within the U.S. horticultural industry support policies that are designed to expand trade, reduce tariffs and quotas, encourage exports, and eliminate programs that distort trade incentives. At the same time, growers appreciate and recognize that increased domestic sales and trade will require added costs and both human and financial capital expenditures so productivity gains can be achieved. Of some concern to certain grower associations are ideas similar to the country-of-origin labeling requirement that is both financially burdensome and could be viewed as simply a trade barrier masquerading under the name of consumer protection.

There exist many challenges and opportunities for the produce industry as increased demand attracts new domestic growers as well as foreign suppliers. As trade liberalization occurs, some grower associations will see free trade as a competitive threat to the U.S. market. Many times, fruit and vegetable trade is not controversial because it involves items not grown widely (for example, virtually 100% of many tropical fruits such as mangoes and bananas are imported) or it involves a contraseasonal product such as stone fruit (peaches, nectarines, plums, and apricots) grown during the U.S. winter by South American growers. However, as trade volume increases, it is inevitable that trade disputes will arise.

During this session, John VanSickle (JJV) provided his experience and insight concerning the settlement of NAFTA trade disputes involving an allegation of dumping fresh market tomatoes. Since 1996, U.S., Canadian, and Mexican tomato growers have alleged that imported tomatoes were dumped (sold below a "fair price" or cost of production) into respective domestic markets. For trade disputes involving alleged dumping in U.S. markets by a firm located in Canada, the dispute could be resolved in several ways but most often involves a sequence of hearings and meetings among private firms, industry experts, and U.S. government representatives, such as the U.S. International Trade Commission (USITC) and the U.S. Department of Commerce (USDOC). As JJV notes, oftentimes USITC and USDOC officials must answer basic questions, such as "was product x similar to product y?" or, in the most recent case, "was a winter-grown U.S.-grown field tomato a like product to the Canadian greenhouse-grown tomato?" before they answer the dumping charge. In hearings, industry observers and experts stated that greenhouse tomatoes and field tomatoes looked similar but were unlike products because they possessed different quality attributes, were harvested at different maturity stages, involved different production methods, and were sold at very different wholesale and retail prices. JJV noted that in a 1996 earlier dumping case involving the Florida winter tomato growers and West Mexican tomato producers, the "like product" topic was also important. In the West Mexico case, a Jordan and VanSickle study concluded that market integration existed between the Florida winter tomato market and the market for the West Mexico tomato; that is, they were like products because buyers did not differentiate between them, prices were similar, and buyers seemed to substitute freely between them. The Jordan and VanSickle study utilized a market integration model to test for market homogeneity. This economic-based model was useful in resolving the Florida–Mexico like product tomato dispute earlier and JJV suggested that several economic tools, including econometric models, could be useful to the USITC in examining the similar issue involving the charge made by U.S. tomato growers that Canadian hydroponic greenhouse tomatoes were dumped into U.S. markets during 2002. As before, The USITC had to decide; "Were Canadian greenhouse tomatoes like products with U.S. field tomatoes?" The like product rule meant that it would be difficult for U.S. producers to prove economic injury to the U.S. tomato industry since Canadian greenhouse tomatoes were a very small portion of annual U.S. tomato production and consumption (both field grown and greenhouse).

The USITC did not use the market integration model employed earlier by Jordan and VanSickle when they made a ruling that field- and greenhouse-tomatoes were, in fact, like

products. The USITC did employ an Armington-type model to advise them about the extent of possible economic harm. In effect, the Armington model showed little economic harm incurred by the U.S. tomato industry. One shortcoming of the market integration approach used by Jordan and VanSickle is that it employs pairwise evaluations of products. For tomatoes, it is likely that a number of paired relationships would be large since the number of varieties and types of fresh markets are also large. Consideration of all combinations would be time-consuming and expensive. JJV argued that the USITC and USDOC should use economic-based models to decide important points such as like products because it is a crucial dimension to the dumping allegation. I agree entirely that economic-based models can provide insight to the USITC and USDOC members about the degree of integration between markets for products. In this case, the outcome of using an economic-based model might have supported or refuted the USITC decision, but we will not know because it was simply not used. JJV also noted that an article by Julian Alston expressed concerns about the use of Armington-type models in economic injury cases. After the fall 2002 USITC ruling, Canadian, Mexican, and U.S. tomato producers elected to set up the North American Tomato Trade Work Group to circumvent or minimize future trade disputes, especially dumping charges. It is hoped that this group will create a stable marketing environment for U.S., Mexican, and Canadian tomato growers.

David Eastwood et al. presented information obtained from a multistate grower survey that offered views about how fruit and vegetable growers in Kentucky and Tennessee seemingly differed in attitude and approach to marketing from their counterparts located in North Carolina. The grower survey was a component of a larger study designed to identify and analyze differences in fruit and vegetable marketing approaches among growers in Georgia, Kentucky, Tennessee, and North Carolina. Although it is difficult to generalize within and across states, Census of Agriculture data suggest that the typical North Carolina and Georgia fruit and vegetable grower tended to be a higher volume, larger scale operator relative the typical Kentucky and Tennessee fruit and vegetable grower. Larger volume commercial fruit and vegetable growers tend to rely on migrant labor to plant and harvest crops, utilize intensive production systems (drip irrigation and plastic culture) in order to coordinate product availability with their market window, operate a seasonal packing shed to grade and box uniform product, use a commodity broker to arrange sales, and attempt to forward price (contract) fresh market sales. The report focuses on a comparison among fruit and vegetable growers located in Kentucky, Tennessee, and North Carolina. Many fruit and vegetable growers also grew tobacco, since there exists complementarities between horticultural crops and tobacco (e.g., chemicals, equipment and in-row plant spacing, use of labor, etc.).

Eastwood also noted significant differences in the amount of public resources committed in the three states to assist fruit and vegetable growers in their marketing efforts. For example, the State of North Carolina and the North Carolina Department of Agriculture and Consumer Services own and operate five high-volume state farmers' markets, whereas the State of Tennessee and the State of Kentucky do not own or operate any farmers' markets. In Tennessee, however, city-county governments have provided support for community markets in Knox County, White Pine, Memphis, and Nashville, but little, if any, wholesale or bulk selling occurs at any of these markets. Kentucky also has a number of community markets that are owned or operated by local municipal governments. Significant differences existed among the states concerning the number of horticultural marketing specialists employed by land grant universities and by the respective departments of agriculture. The North Carolina Department of Agriculture employs approximately 20 marketing specialists with fruit and vegetable responsibilities, whereas Tennessee and Kentucky employ fewer than five. The bottom line in a comparison across states is that the North Carolina horticultural industry produces and sells much

greater volumes than horticultural growers in either Kentucky or Tennessee, resulting in a much larger share of the commercial fruit and vegetable sector. In effect, North Carolina fruit and vegetable growers are more likely to use brokers and wholesalers to sell fresh product, employ migrant labor crews, and ship product to distant markets. The Kentucky and Tennessee fruit and vegetable growers are more likely to grow limited quantities of a few commodities, depend on market niches to sell direct-to-consumers or local market, and employ family labor and local labor to harvest the crop.

Finally, Woods and Cook outlined a path-dependent competitive model that offered one explanation why very different tomato growers located in distinct regions (Florida, Canada, and Mexico) could compete effectively in the U.S. tomato market. To an extent, Woods and Cook argue that resources needed to compete can be created in an area or region through economic development. In effect, it seems that as local leaders and area entrepreneurs assess market opportunities, curiosity evolves into knowledge and the acquired knowledge can result in innovation, and innovation can identify a competitive market advantage. Woods and Cook cite the research of M. Porter and V. Ruttan to discuss their ideas about induced innovation and technology change. As I understand the Woods and Cook argument, it would seem that each distinct tomato production region consists of individuals who acquire skills, develop core competencies in producing and marketing tomatoes, innovate and adopt appropriate technology, share the appropriate production function, find and satisfy a market niche, and then develop a critical mass of other growers and services so that a marketing infrastructure evolves. Over time, marketing success then changes and stimulates new technology adoption. Institutions such as land grant universities and state departments of agriculture can influence the rate at which technology and information are shared, as well as the rate at which growers evaluate new market opportunities. One implication of the Woods and Cook argument is that if consolidation and concentration in the fruit and vegetable sector continues, then barriers such as minimum volume, seasonal contracts, and market power could dominate traditional competitive market forces such as acquisition cost or value added. Although economic forces will continue to drive changes in the tomato marketing system, global forces, international trade, and strategic partnerships will drive the pace of change that will occur in the retail, distributor, and grower sectors. New competitive standards will evolve, and they will reflect consumer preferences such as nutrition, genetic, and country-of-origin labels, convenience, farm-to-store traceback ability, and food safety.

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