

Appendix 1—Protected Agriculture Technologies

Shade House Production Systems

At one end of the protected agriculture continuum is a low-technology strategy involving shade houses, or in Spanish, *malla sombra* or *casa sombra*. A shade house is a simple structure to support shade cloth, a type of screen. This provides passive control of the environment by shading the plants from excessive sunlight and wind. Shade houses are expensive relative to open field production but are the lowest cost option within protected culture. Other structures which have plastic or glass roofs must support rain, snow and wind, and therefore require stronger, and more expensive, permanent structural support. Shade houses have been widely used for some time by growers in warm climates such as those in Spain, and more recently have been adopted by some export-oriented field tomato growers in Mexico.

These structures can be used to keep plants cooler on warm days, but provide no significant protection from cold air temperatures at night. Because of the relatively limited environmental control they provide, growers can extend shipping seasons only marginally. The most important benefits are generally much higher yields compared with open field production, and the potential for improved quality. Growers with shade houses typically grow their tomatoes in the soil rather than hydroponically. Some Mexican growers market these tomatoes as a greenhouse product. Other shade house growers do not attempt to differentiate their tomatoes from field tomatoes. Some refer to their product as hothouse tomatoes, which simply implies some type of protected culture. In Europe, where there is also a mix of high technology greenhouse and shade house production, buyers differentiate tomatoes based on quality, rather than the growing system, and labeling distinctions are unimportant.

Greenhouses—a Range of Technologies

At the other extreme of protected agriculture is the high technology greenhouse strategy involving a sturdy, permanent structure, with either glass, flexible film plastic, rigid panel acrylic, or polycarbonate roof and walls. High technology greenhouses may also include interior shade screens or energy-saving insulation curtains. With more protection from the elements, growers can control their environment to a high degree. This is active environmental control compared to the passive control provided by a shade house. The most sophisticated growers actively monitor and control light, air temperature, humidity, water, nutrients, and carbon dioxide levels in the structure to maximize profitable production, generally using hydroponics for water and nutrient management. These are the most expensive protected agriculture systems.

By providing all the plant's nutrients via hydroponics and regulating the environment, yields can be very high, as much as 15 times greater than field production per year. However, since the plant is completely dependent on human care and crop management for every requirement, there is little room

for error. Large hydroponics operations will usually have backup systems, including water and temperature control, as well as emergency power generation capability, since the tomato plants could die in the event of even a short disruption of services. For example, in hydroponic production a tomato plant may be watered 20 times a day in the winter and up to 40 times in the summer. Growing in soil, on the other hand, is much more forgiving since soil has a natural storage capacity that retains moisture and nutrients.

With hydroponics it is also important to avoid build up of soil-borne pests and diseases. With a field-grown tomato, the season ends and the field may lay fallow or be rotated into another crop. High-technology protected agriculture operations typically produce tomatoes over an extended season or year-round, year after year, and soilborne pests and diseases can be a problem. Using artificial growing mediums, like rockwool, break up the pest cycle since they are sterile and wrapped in plastic. Growers using hydroponics may be able to achieve better flavor than those growing in the soil. With hydroponics, growers can change the soil chemistry within minutes as opposed to days when growing in the soil (Jensen, 2005).

Even in a high technology greenhouse where the grower actively controls the environment, the outside environment does make a difference. The appropriate technology is site specific and may take several years to develop. There are numerous site location factors that must be considered.

In some cases a low technology greenhouse (just a permanent structure and production in the soil) may be enough to meet a grower's needs, particularly if the grower is producing for a short season and soil-borne illnesses are not a serious problem in that location. A medium technology operation could extend the season by adding more environmental control or boost yields by using hydroponics.

Appendix 2—Potential Returns From Fresh Tomato Protected Agriculture in Mexico

The relative scarcity and high cost of capital is a major influence on protected culture technology choices. After all, protected culture is very capital intensive, even at the lowest technology (shade house) level. Nominal Mexican interest rates are commonly in the 20-percent range and collateral requirements are high. In general, the more temperate the climate, the greater the payback from investing in technology, as the fixed costs can be paid back over a longer, potentially year-round, shipping season. Hence, coastal field tomato growers in Sinaloa and Baja with limited growing seasons tend to use protected culture for only a portion of their total tomato area and invest in lower technology packages, whereas greenhouse producers located in temperate areas without any field production tend to invest in higher technology. But even between two coastal, limited-season areas like the States of Sinaloa and Baja California, there are differences in the potential returns from investing in technology.

A comparison of partial information on relative costs of field and protected agriculture in Sinaloa, Mexico's principal tomato production and export region, puts alternative systems into perspective.¹ Public information on yields and costs are not available, but the following estimates from growers and industry suppliers help provide a sense of the magnitude of some of the differences in yields and costs for alternative production systems. Sources indicate that **total** production (fixed and variable) and harvest costs for high technology, drip-irrigated open field round tomatoes in Sinaloa are around \$14,000 to \$18,000 per hectare. Switching some area to protected culture requires growers to have access to much more capital per hectare. Construction costs alone for shade house operations, **excluding** variable production and harvest costs, generally surpass \$55,000 per hectare.

To make the technological jump to a plastic greenhouse requires \$110,000 to \$113,000 per hectare in construction costs, and this only involves a passive system with no ventilation, no heating, no computer system, and only rudimentary irrigation. Medium-technology plastic greenhouses with active ventilation, air heaters, improved irrigation systems, and a small computer cost from \$190,000 to \$270,000 per hectare to construct. Understandably, most protected culture investments in Sinaloa do not reach the medium-technology level and the few that do may cut costs somewhat by not installing heaters.

With high investment costs, it is critical to achieve maximum potential yields. In Sinaloa, yields of vine ripe tomatoes for the top export-oriented field tomato growers are 60-69 metric tons per hectare, compared with yields of 110-150 for lower technology plastic greenhouses growing in soil. The top medium technology greenhouse growers in Sinaloa achieve beefsteak tomato yields of 250-300 metric tons per hectare using hydroponics.

Sinaloa growers achieving target yields for shade house, low-technology greenhouses, and medium-technology beefsteak tomato greenhouses can all have investment costs per metric ton of around \$800, exclusive of variable

¹ Although the field production cost information is specific to Sinaloa, the protected culture costs are similar across regions.

costs, compared with around \$226 per metric ton for field tomato growers. Clearly, field growers expect lower risks, higher quality product, and higher average prices when investing in protected culture since the gain in yields does not compensate for the higher investment costs alone, not to mention the additional growing costs using protected culture.

In more temperate regions of Mexico, costs for plastic high-technology greenhouses with no cooling but warm water heating, carbon dioxide enrichment, and the best computer and irrigation systems range from \$440,000 to \$550,000 per hectare. Costs for the same system but with a glass greenhouse adds \$170,000 to \$280,000 per hectare. Adding a cooling system would require another \$90,000 to \$110,000 per hectare, such that the highest active technology greenhouses with heating and cooling can approach \$1 million in investment costs, when land and other infrastructure are included. Variable operating costs are also higher for higher technology greenhouses.

High-technology growers in central Mexico routinely achieve beefsteak yields above 500 metric tons per hectare, with some approaching 600 metric tons per hectare. Glass greenhouses growers in Imuris achieve yields of 400-550 metric tons. Investment costs for growers employing the highest technology greenhouses may range from \$1,000 to \$1,200 per metric ton. Since these types of operations largely exist in temperate areas without major commercial field tomato production, comparative field tomato growing costs are unavailable.

Low-technology greenhouse operations exist in both coastal and temperate areas, and yields vary by location for the same technology package. Many lower technology greenhouse producers in temperate, extended shipping season areas can achieve beefsteak tomato yields of 170 metric tons per hectare, compared with yields averaging only 75-85 metric tons for some growers in the Baja California peninsula, and the intermediate yields noted previously for Sinaloa.

Clearly, as field tomato growers invest in greenhouse technology, they will require substantially higher yields and higher prices to compensate for higher production costs per metric ton. Greenhouse industry leaders point out that growers investing in greenhouses must understand that it is a premium quality business, and high standards must be maintained for the industry to be competitive and maintain orderly markets.

While investment in technology is increasing, attention to management is also improving. In many cases this development may be more responsible for higher yields than changes in technology. Many growers have not yet reached the yield potentials for their technology level. The greenhouse business is not the same as the open field business, and early investors speak of a 3-5 year learning curve. Although a relatively benign climate in many areas has allowed for profitable investments in low- and medium-technology greenhouses, those growers with sufficient capital to make higher technology investments seem to perceive an economic benefit to doing so. Many argue that if capital were less of a constraint, given the same climatic conditions, there would be greater investments in technology than has been the case to date. Shifting from growing in the soil to hydroponics is an important transition mentioned by growers as they strive to improve yields and quality. Those

growers with both financial resources and knowledge of net returns from alternative technology packages are intensifying their technology and management investments. In addition to raising the technology bar necessary for competitiveness over time, this pattern should improve the Mexican greenhouse tomato's industry reputation for quality and consistency.

As more growers invest in technology in their drive to improve yields, the economic pressure to extend shipping seasons will likely build, as growers seek to recover the higher level of fixed costs. While Mexican growers hotly debate the relative net economic benefits of shipping during the summer when production in the United States and Canada is at peak levels and prices are low, higher investments in technology are more likely to persuade growers to adopt an extended season strategy. Hence, as Mexicans upgrade technology, even without any growth in area, production could expand significantly in the near term, due to the effect of both technology and marketing strategy choices on annual yields. Of course, in the medium to longer term, greenhouse investment costs will decline as more domestic input suppliers emerge, the quality of domestic inputs increases, and the most appropriate technology packages and structures for each region become apparent, helping Mexico to control costs.

Appendix 3—Data on U.S. Greenhouse Tomato Imports

At the urging of the U.S. fresh tomato industry, AMS Market News Service requested a Harmonized Tariff Schedule code number be established to identify greenhouse tomatoes. The greenhouse tomato code went into effect July 1, 1999 (see table). There are two greenhouse tomato tariff codes: one for March 1 to July 14 and September 1 to November 14; and another for November 15 to the last day of February in the following year. There is no greenhouse tomato tariff code for the period July 15 to August 31. During that time period, greenhouse tomatoes are classified as cherry, grape, roma, or other, underestimating annual greenhouse tomato imports.

There appears to be a problem of underreporting of true greenhouse tomato imports even during the 46 weeks of the year with data on greenhouse imports. Customs brokers at the borders may not report the tariff codes correctly. For example, virtually all U.S. tomato imports from Canada are greenhouse, yet the official trade statistics in 2000 only reported 61 percent of tomato imports during time periods with a greenhouse tariff code as greenhouse. By 2003, the share had increased to 94 percent, indicating an adjustment to the new codes by industry and customs brokers. For Canada, Europe, and Israel, we simply assume all fresh tomato imports are greenhouse (based on industry intelligence), correcting for any miscoding.

However, misreporting of Mexican greenhouse tomatoes greatly complicates measuring actual greenhouse tomato imports. Since Mexico ships both field grown and greenhouse tomatoes, it is impossible to make any assumptions regarding the share of fresh tomato imports that may be greenhouse. In 2000 only 5 percent of tomatoes from Mexico were classified as greenhouse during periods with a greenhouse tariff code, with the share increasing to 8 percent in 2003. Given the serious underreporting problem we feel this represents, we opt instead to estimate total greenhouse tomato imports from Mexico by extrapolating from production estimates obtained from Mexican producer interviews. For 2003, U.S. Department of Commerce (DOC) greenhouse tomato imports were only 46 percent of the estimated total imports of 125,970 metric tons.

The last NAFTA tomato tariff ended on February 28, 2002. Now that there are no tariffs on tomatoes in the NAFTA countries, there is reduced incentive for correctly assigning tariff codes. Similarly, there is no urgency for filing re-export paperwork. When the United States had a tariff, but Canada did not, firms filed paperwork for re-exports so they did not have to pay the U.S. tariff. At that time, U.S. re-export numbers were probably more accurate than they are now.

DOC trade data are available with a 2-month lag and only provide unit prices on a monthly basis—often useful for analysts but not for tomato traders. AMS Market News Service provides daily import volume and free-on-board (FOB) prices in its *Tomato Fax Report*. When customs brokers in Nogales file their paperwork with U.S. Customs and USDA's Animal and Plant Health Inspection Service (APHIS), they also pass their information, including tariff codes for all the tomatoes in a load, on to the Market News Service. Because of this special relationship, the Market News Service can break imports down by tariff

code for those tomatoes from Mexico entering the United States via Nogales during the September through July period. However, the data are only as good as the customs brokers' recordkeeping. In the past, the Market News Service relied on APHIS for information on the volume of tomatoes crossing into the United States in California and Texas. But APHIS, whose primary interest is pests, only broke tomatoes down into three categories: cherry, roma, and all others (including regular, greenhouse, grape, etc.), regardless of whether they were field or greenhouse grown. Beginning in the 2004-05 season, the Market News Service is receiving some information on greenhouse imports in Otay Mesa, California, and Texas.

In terms of volume entering the United States, U.S. Customs figures will always be less than or equal to the Market News Service. Firms in Nogales have 10 days to decide whether the tomatoes will be sold in the United States or another country and notify Customs of reexports. Customs subtracts re-exports from imports but the Market News Service does not. However, it is not clear how many firms actually inform Customs of reexports since there are no tariffs in either country. While the Market News Service uses U.S. Customs data for every other country, it uses its own shipment data from customs brokers for Mexico. Neither Customs nor the Market News Service receives any information on tomatoes sold in bond to Canada. One industry estimate puts the volume of tomatoes sold in bond at less than 10 percent of the total crossings (Calvin, 2004).

Beginning in October 2004, the Market News Service also began reporting weekly shipments of greenhouse tomatoes from Canada and the five largest U.S. greenhouse producers.

U.S. tariff codes for fresh tomatoes, 2003

Code	Category description
	Tomatoes, fresh or chilled:
	If entered during the period March 1 to July 14, inclusive, of the period from September 1 to November 14 inclusive, in any year
702002010	Greenhouse
	Other:
702002035	Cherry
702002045	Grape
702002065	Roma (plum type)
702002099	Other
	If entered during the period from July 15 to August 31, inclusive in any year
702004030	Cherry
702004045	Grape
702004060	Roma (plum type)
702004099	Other
	If entered during the period from November 15, in any year, to the last day of the following February, inclusive
702006010	Greenhouse
	Other:
702006035	Cherry
702006045	Grape
702006065	Roma (plum type)
702006099	Other

Source: Harmonized Tariff Schedule of the United States.

Appendix 4—Data on Greenhouse Prices in the U.S. Market

Ideally, market analysis would be based on U.S. free-on-board (FOB) shipping point prices for all types and sizes of greenhouse products. These data are not collected, so analysis rests on the limited available data.

FOB Prices

Neither the United States nor Canada provides FOB prices for its domestic greenhouse tomatoes. The AMS Market News Service (MNS) reports daily FOB point of entry prices of Mexican tomatoes, including greenhouse tomatoes, entering the United States in Nogales, Arizona, during the main season for winter tomato imports (from September through July). Most of the greenhouse production from Mexico enters during this period. Prices for some summer exports are missed, as well as those entering through other ports of entry. MNS reporting of beefsteak tomatoes began in 1999 and TOV in April 2004. TOV prices are not always published, however, since there are only a few shippers in some periods. MNS reporters call shippers in Nogales to get the daily prices for various sizes of greenhouse tomatoes. Market News does not call shippers in California and Texas for prices on Mexican greenhouse tomatoes; the volume of tomatoes is smaller there, and MNS does not report prices when the number of shippers is very small and might reveal individual firm information.

Trade data aggregate greenhouse cocktail tomatoes with all other greenhouse tomatoes. MNS does not provide any price data on greenhouse cocktail tomatoes because the majority of these tomatoes enter the United States through Texas. The only source of data related to cocktail tomatoes is U.S. Customs port of entry trade data on unit values of all greenhouse tomatoes entering in Texas during the greenhouse tariff period. In 2002, unit values in Texas for all greenhouse tomatoes were just under twice the unit value of greenhouse tomatoes entering through Nogales.

U.S. Department of Commerce (DOC) trade data

DOC trade data provide input unit values for imports (value of trade divided by volume of trade). These data only provide an aggregate greenhouse tomato unit value, not a value for different types of greenhouse tomatoes. This is the best data for looking at greenhouse trends over time from Canada. U.S. prices would likely be similar. But the data have problems, too. In particular, since production has been shifting rapidly from lower priced beefsteak to higher price TOV, pricing trends over time are not clear after about 2000. Imports from Canada in the winter months are very low, so the prices represent a thin market and may not be very representative of U.S. winter prices. Trade data are only available on a monthly basis.

Wholesale Prices

Wholesale prices for greenhouse tomatoes sold in the United States are available from MNS daily reports. This report uses weekly average price as derived from daily MNS prices. These data provide a way to compare prices of particular tomatoes from different countries that are being sold in the market. Wholesale markets may also reflect more local supply and demand conditions than national FOB price trends.

Retail Prices

In the United States, the Bureau of Labor Statistics provides average monthly retail prices for several vegetables, but not greenhouse tomatoes. Currently, the only source of data on greenhouse retail prices comes from private firms selling scanner data. Scanner data from participating firms are compiled into a database representing the weekly sales of particular products identified by price look-up or universal product codes for the average supermarket.

U.S. Dumping Case Against Canadian Greenhouse Tomatoes

On March 28, 2001, six U.S. greenhouse firms brought a dumping case against Canadian greenhouse growers. One of the key issues in the case was the definition of the relevant industry, specifically whether greenhouse and field grown tomatoes are “like” products. The U.S. greenhouse producers argued that greenhouse and field-grown tomatoes are not like products; the Canadian growers argued that they are. The definition of the domestic like product and industry is important for determining injury. A determination that greenhouse and field tomatoes are like products means that the U.S. International Trade Commission (ITC) would have to find that Canadian greenhouse imports caused injury to the whole U.S. fresh tomato industry, whereas a determination that greenhouse and field tomatoes are not like products means that the ITC would only have to find injury to greenhouse producers. The ITC considers several factors in making its case-by-case decision, but no one factor automatically defines the industry. The ITC looks for clear differences between products and not minor variations. Furthermore, the ITC is not bound by previous decisions on the same product. The six traditional factors used by the ITC in its domestic like-product examination are: physical characteristics and uses; interchangeability; channels of distribution; customer and producer perceptions of the products; common production facilities, production processes, and production employees; and price. In its preliminary injury determination on May 10, 2001, the ITC found that the relevant industry was just greenhouse tomatoes but that it intended to re-examine this issue in any final phase of the investigation because the evidence was mixed (ITC, 2001).

The U.S. Department of Commerce (DOC) announced preliminary dumping margins on October 2, 2001, and began collecting duties from Canadian growers (see table). After issuing preliminary margins, DOC continued to fine tune the margins. Margins are often changed during the course of an investigation. In the preliminary determination, the Canadian firms BC Hot House (BCHH) and Red Zoo received margins of 50.75 and 23.17 percent, respectively. The revised preliminary margins, announced on October 19, 2001, lowered BCHH’s margin to 33.95 percent. The high margins produced an uncertain environment for Canadian greenhouse growers.

After DOC issued its preliminary dumping margins, Canadian officials proposed a suspension agreement, but it was not accepted. In April, an attorney for Canadian growers was quoted as saying there was “not enough middle ground for a deal” (*The Packer*, 2002e). There was some speculation that the Ontario industry thought it would have low margins, compared with British Columbia, and might try to obtain segregated treatment (*The Packer*, 2002a). Ontario growers filed a NAFTA appeal to obtain a separate dumping margin from BCHH (*The Packer*, 2002d). This competition between Ontario and British Columbia might account for the lack of a middle ground.

DOC released the final dumping margins on February 19, 2002. Three of the Canadian companies had very small margins, and two had significantly higher margins—BCHH and Mastronardi (Red Zoo’s margin had decreased to 1.86 percent). On March 28, 2002, DOC issued an amended final determination of dumping duties (*The Packer*, 2002c). The duty for Mastonardi declined from 14.89 percent to 0.52 percent. Other changes were very small: BCHH declined from 18.21 percent to 18.04 percent, Red Zoo declined from 1.86 percent to 1.85 percent, and J-D Marketing declined from 1.53 percent to 0.83 percent. The duty for Veg Gro did not change. The “all other” duty increased from 16.22 percent to 16.53 percent since *de minimis* duties are not included in the calculation for this category.

On April 12, 2002, the ITC determined that greenhouse and field grown tomatoes were like products. ITC, based on the information gathered in its investigation, wrote that greenhouse and field grown tomatoes were part of a continuum of different types of tomatoes. Retailers provide consumers with a range of tomatoes, and the mix varies on a weekly basis. With respect to consumer preferences, the ITC received statements that greenhouse tomatoes might taste better than mature green tomatoes, but consumers tend to prefer locally grown vine ripe tomatoes. With regard to price, greenhouse tomatoes generally sell at a premium, compared with field grown tomatoes, but at a lower price than organic, grape, and cherry tomatoes. In the case of production facilities, processes, and employees, field and greenhouse tomatoes demonstrate clear distinctions. Therefore, in its deliberations, the ITC considered whether the entire U.S. fresh tomato industry had suffered injury due to imports of greenhouse tomatoes. The ITC ruled that Canadian greenhouse exports had not caused damage to the U.S. fresh tomato industry and dismissed the U.S. case against Canada (ITC, 2002).

Canadian Dumping Case Against All Types of U.S. Fresh Tomatoes

In November 2001, after the DOC issued preliminary dumping margins against Canadian firms, the Canadian Tomato Trade Alliance (CTTA) brought a dumping case against the United States for tomato exports of any type for the fresh market, not just greenhouse tomatoes as in the U.S. case.¹ The Canadian case also covered any tomatoes originating in or exported from the United States (Canadian Customs and Revenue Agency, 2001), thus affecting Mexican tomatoes indirectly as well. During the winter season, almost all Mexican field tomatoes for export are grown in Culiacán, Sinaloa, and then sent by truck to Nogales, AZ, where the tomatoes are marketed to both the United States and Canada.² Mexico claimed that Canada had in effect initiated an investigation against Mexican tomatoes but that since a formal dumping suit was not filed against Mexico, the method denied Mexico’s producers and exporters their rights accorded under the World Trade Organization. Canada stated that tomatoes shipped in bond from Mexico to Canada would not be included in any dumping margins. Otherwise, tomatoes are entering U.S. commerce and being re-exported from the United States and, therefore, fall within the scope of the dumping case (*The Packer*, 2002b). Very few tomatoes are now shipped in bond, perhaps less than 10 percent. Shipping tomatoes from Mexico to Canada in bond would incur additional costs.³

¹The British Columbia and Ontario industries, strong competitors in normal times, joined together to form this organization in early 2001 as U.S. groups began to talk about perceived dumping by Canadian firms.

² Large Mexican growers own many of the marketing firms in Nogales. In 1997, 63 percent of the volume of tomatoes imported through Nogales was sold by Nogales-based Mexican grower-owned marketing firms (Calvin and Barrios, 1998).

³ Currently, tomatoes arrive in Nogales, and shippers then select tomatoes to prepare orders for buyers. To meet buyer specifications, a shipper might use tomatoes from several truckloads to fill the order. If some incoming truckloads were off-limits because they were in bond shipments to Canada, shippers would have less marketing flexibility. Shippers might, however, be able to make adjustments to the way they prepare their loads to reduce this problem.

On January 8, 2002, the Canadian International Trade Tribunal (CITT) ruled that the preliminary injury inquiry revealed a reasonable indication that dumping of tomatoes had caused injury to the Canadian industry. As in the U.S. case against Canada, the CITT had to decide what were the like products. In its preliminary assessment, the CITT decided that field and greenhouse tomatoes were like products, since in their view, there are more significant similarities than differences.

On March 25, 2002, the Canada Customs and Revenue Agency (CCRA) issued its preliminary determination on dumping margins, which ranged from an average margin of 0 to 71 percent per individual firm (Canadian Customs and Revenue Agency, 2002). Firms that were required to submit data and complied had an average margin of 22 percent. Those that were not required to submit data were assigned a 22-percent margin. Firms that were required to submit data but did not comply received a rate of 71 percent—the highest average dumping margin for a complying firm.

The U.S. side offered an undertaking proposal (the Canadian term for a suspension agreement) on April 15, 2002. The undertaking involved minimum prices for mature green tomato exports to Canada between June 1 and September 30. The CCRA rejected this proposal in early May as failing to eliminate the injury.

There had been discussions between U.S. and Canadian tomato organizations about resolving the case out of court. On June 19, the CTTA informed the CITT that it did not wish to advance the dumping case and requested that it cancel the upcoming hearing scheduled for June 24 and terminate the case. The CITT cancelled the hearing but informed the CTTA that it would proceed to make a final determination.

On June 24, 2002, the CCRA announced its final determination on dumping margins, which were very similar to the preliminary margins. The average margin for complying and nonmandatory respondents rose from 22 to 26 percent and the margin for noncooperating mandatory respondents fell from 71 to 70 percent. These margins could have had a serious impact on Canadian consumers. In 2000, 51 percent of Canadian tomato consumption consisted of imports from the United States.

Although not scheduled to make a final determination until July 23, the CITT made its final determination on June 26, 2002. The CITT decided that the dumping of tomatoes had not caused injury to the Canadian industry and so ended the case. The CITT had advised the CTTA that it would draw the appropriate inferences from the CTTA's request to terminate the case. In addition, there was not clear information regarding the financial performance of the Canadian greenhouse growers and the allegation that greenhouse prices are determined by the price of U.S. field grown imports. Finally, CITT noted that Canadian production increases may have affected prices, rather than U.S. imports (Canada International Trade Tribunal, 2002). Since 1990, U.S. tomato exports to Canada had moved within a narrow band, ranging from a low of 120,284 metric tons to 148,296 metric tons.

U.S. dumping margins for Canadian greenhouse tomato firms

Firm	Preliminary margins 10/2/2001	Revised preliminary margins 10/19/2001	Final margins 2/19/2002	Amended final margins 3/28/2002
	<i>Percent</i>			
BC Hot House	50.75	33.95	18.21	18.04
Red Zoo	23.17	23.17	1.86	1.85
Mastronardi	5.54	5.54	14.89	0.52
Veg Gro	2.45	2.45	3.85	3.85
J-D Marketing	0	0	1.53	0.83
All others	32.36	24.04	16.22	16.53

Source: U.S. Department of Commerce.