

# Mexican Competition: Now from the Greenhouse

Dan Cantliffe<sup>1</sup> and John Vansickle<sup>2</sup>

<sup>1</sup>*Horticultural Sciences Dept., UF, Gainesville,* <sup>2</sup>*Food and Resource Economics Dept., UF, Gainesville*

Commercial greenhouse production of horticultural crops in Mexico started in the 1950s. Initially local growers produced flowers in wood-type structures covered with plastic. It was not until the 1980s, however, that greenhouse-type structures were used in vegetable production. By today's standards, these structures were semi-rustic. In the 1990s, larger, more modern greenhouse structures began to appear in various places in Mexico. More vegetables started to be produced, primarily destined to export market, and thus at that time investment capital became available as well as interests from various groups from countries including Israel, Holland, and Spain began to both sell and operate greenhouses for vegetable production in Mexico.

Presently there is in excess of 5000 acres of greenhouse production in Mexico. Estimates place about half of this production in vegetables and the other half in floral production.

Growers in Mexico have turned to greenhouse production of vegetables in order to provide a controlled environment to improve product quality. Mexican greenhouse producers have been attempting to develop vegetable brands that are accepted in the marketplace by wholesalers and other buyers. They hope to improve their image on product quality and food safety as well as maintain stricter control of water quality.

It is estimated that there are approximately 12 major providers of vegetable greenhouse products to the United States from Mexico (Lopez and Shwedel, 2001). These producers are primarily targeting the winter market when the prices are highest. The use of greenhouse production helps the Mexican producers offset certain problems with production as it relates to weather, both rain and cold temperatures, and thus they are able to better adjust the timing for market delivery.

Presently there are various reasons for Mexican producers to develop a greenhouse industry for vegetables. These include 1) the need to reduce the impacts from variations in climatic conditions on produce quality. 2) The opening of the Mexican economy, bringing with it access to different types of technology, i.e. people are willing to invest in Mexico. 3) The search for solutions to different problems that affect open field production, for instance, various diseases, insects, weeds, etc. 4) An increase in demand by consumers for better and safer products, especially for export markets where food safety issues, including the border quality, have the potential to become major trade issues.

Mexican vegetable greenhouse production has been highly developed in five states including Baja California which is 9.5% of the production, Baja California Sur 13.5%, Sonora 6.9%, Sinaloa 26.3%, and Jalisco 27.4% (Lopez and Shwedel, 2001). It is estimated that total value for vegetable production from Mexican greenhouses is in excess of \$300 million today. The major vegetable crops produced are tomatoes (60% of the total greenhouse area), cucumbers (20%), and peppers (10%). Of the tomatoes, the main varieties are vine-ripe large rounds, cherry tomatoes, Roma tomatoes, and also a group called greenhouse tomatoes.

Twelve years ago, in 1991, there were only 125 acres of vegetables being produced in greenhouses in Mexico. Because of NAFTA and the enhanced access to the U.S. market, interest in greenhouse production has grown dramatically over this period. Further, as the Mexican economy improves and the peso strengthens, the greenhouse industry has expanded greatly in the last two or three years. Presently there is in excess of 2500 to 3000 acres of greenhouses being dedicated to vegetable production. Although much of the production is in the five Mexican states previously mentioned, there are 15 states in Mexico with greenhouse vegetable production. About 84% of the total production, however, is in those five states.

The U.S. is by far the most important market for Mexican greenhouse vegetable producers. Over 92% of the greenhouse production for export goes to the U.S. The rest goes to Canada and as far away as to Europe and the E.U. (Lopez and Shwedel, 2001).

In 2000, total imported tomato value into the U.S. was approximately \$147 million, or 95,000 tons of fresh market tomatoes. Of those values, \$78 million of tomatoes produced in the greenhouse were being imported from Canada, while \$36 million worth of tomatoes were being imported from Mexico. In contrast to only one year previous, 1999, the value had risen over \$100 million because of import of greenhouse tomatoes into the U.S. which in 1999 was somewhat under \$44 million at 28,000 tons. Mexican producers had only \$4.2 million of that market share. Thus, in the one-year period, importation of tomatoes from Mexican greenhouses increased in value from \$4.2 to \$36.1 million. Subsequent to that, importation of tomatoes from Mexican greenhouses has increased. Several large field producers of Mexican tomatoes have converted to partial or total production coming from greenhouses over the past 4-5 years. Dutch and Canadian greenhouse tomato prices are still higher than those tomatoes coming from Mexico. The lower prices are somehow reflected in transportation cost differential to major markets, cheaper labor costs and newness of the Mexican greenhouse industry in the marketplace. As the greenhouse industry matures, it is bound to expand and product prices are bound to improve.

With regard to structures, plastic greenhouses cover about 95% of the total area of the greenhouse production and only 5% or less of the area is covered with glass. The primary reason is the price differential and the fact that in many regions in Mexico, glass is not needed. The plastic film used is PVC (polyvinilic chloride) and most of the greenhouses are high-roofed generally 4-5 meters from floor to the top beam. A large number of the greenhouses are locally produced in Mexico. However, there are also a large number of greenhouses from Israel, Canada, the Netherlands, Spain, France, and the U.S. Mexican greenhouses are of somewhat less quality, but also cost less than imported houses. Israeli greenhouse manufacturers will sometimes help with funding of greenhouse construction, while greenhouse manufacturers from Spain will setup greenhouses for certain growers free of cost for a certain percentage of return on the crop that will be produced from the greenhouse. It is estimated that the basic structure for 2.5 acres is \$165,000 USD for construction (Lopez and Shwedel, 2001). This price includes all the metal and plastic, but does not include any mechanical features, or the irrigation. Many times local labor is used for construction, and whenever lesser materials are used construction prices can be somewhat lowered as much as 50% from that cost.

In Mexico local banks will loan capital for investments for periods of only up to five years. The credit market has relatively high borrowing costs in local currency, thus most producers are forced to go with less expensive plastic style greenhouses. In many areas of Mexico, especially in Sinaloa, which is the second largest vegetable producing state, temperatures in the winter time can fall either near or below freezing. Most greenhouses were constructed without heating systems, however new greenhouses are being constructed with either hot water tubing or gas generated space heaters. The heaters are generally manually operated, and thus producers can be assured that if temperatures go to or below freezing, they will have produce to sell in the winter time in the U.S. market.

In summary, most areas of Mexico provide a perfect environment for greenhouse vegetable production. Good day length and strong light intensity during the winter months are prime factors in developing a greenhouse industry in this region of the world. Technology has been available from outside sources and especially cost effective in construction are the Israeli type high-roof passive ventilated greenhouses, and more recently into Spanish new-style greenhouses. Production of crops from the greenhouse gives production advantages, such as improved scale of efficiencies from a variety of different systems and the ability to market a premium product. Some of the constraints are the fact that in much of the production areas there is a long distance to the market place,

especially in places in Baja or Sinaloa or Jalisco, in many cases a 36-hour ride or longer to southern California or southern Arizona. Further, material costs are similar to the U.S. or higher, but labor in general is considerably lower. Another concern, especially in the Baja, is water, both quantity and quality.

Greenhouse production is in fact becoming more common and more popular in Mexico. Medium and large producers are beginning to develop strong greenhouse production systems and take advantage of existing marketing outlets. With access to North America, especially the U.S., through NAFTA, foreign investment has been greatly stimulated. Tomatoes are still the most important crop produced in Mexican greenhouses, although cucumbers and peppers have continued to increase in quantity of production. Continuation of constraint on the entire industry relates to the volatility of the market for greenhouse products. Generally with field produced vegetables, many of the Mexican companies have established contractual agreements both within the local markets within Mexico, as well as with markets in the U.S. This has allowed them to better adjust to price fluctuations. Finally, although Mexico has inexpensive labor, it is not an absolute low-cost producer because capital and energy tend to be higher than in North America and in fact, than in the E.U. Essentially, if premium prices are not continued to be paid for Mexican produce from the greenhouse, it is potentially possible that these producers are in danger of going out of business.

It should be recognized that tomato production from greenhouses in Mexico is still only a small percentage of the total production of tomatoes being produced and exported from that country. The most significant factor to concentrate a threat from Mexican greenhouse tomato production to the Florida market would be the broadening of the greenhouse production area. As already experienced, 5-6 other states outside of Sinaloa that normally would not produce tomatoes in winter now do. Continuation of high price returns in a high quality market could have a profound influence on the future for Florida tomato producers.

As to the future of greenhouse tomato production, presently there are approximately 850 acres of greenhouse tomatoes being produced in the U.S., or about 6% of the total tomatoes produced in this country. The major states producing greenhouse tomatoes are Arizona, Texas, Colorado, and Pennsylvania. On a global scale, Canada is producing approximately 1600 acres of greenhouse tomatoes, Belgium 1700 acres, Mexico 1800 acres, and Holland produced 2200 acres. Again, this does not seem like a lot coming from greenhouses on a world basis, but if one would look at the statistics of where most of these tomatoes wind up, this production is in many cases in direct competition with Florida tomato producers. A last thought to leave however, and one that has been related by these authors in a previous paper and a previous talk to the Florida Tomato Institute, is the fact that the world leader, Spain, presently has well over 50,000 acres of greenhouse space devoted to the production of tomatoes. Further, as the Spanish greenhouse industry matures and improves on their marketing abilities, they too will be not only another competitor, but may be the major competitor for Florida production tomato market space in the U.S.

#### **Reference**

Lopez, J. and K. Shwedel. 2001. The Mexican greenhouse vegetable industry. Industry Note 032-2001, 5 pp.