

## Conclusions

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As evidenced by the emerging greenhouse tomato market, the North American fresh tomato industry is no longer just a field grown tomato industry. In 2003, over 17 percent of total (retail and foodservice) fresh tomato consumption in the U.S. market was estimated to be greenhouse grown. Even though greenhouse tomatoes remain a minority player in the industry, they have expanded beyond niche status and are playing a more influential role in fresh tomato markets. As a larger factor, greenhouse tomatoes are increasingly influenced by supply and demand trends in the fresh field industry, and vice versa.

Seasonality remains one of the most important factors shaping the North American fresh tomato industry. The greenhouse industry has seasonal production patterns similar to the fresh field industry, despite the fact that production takes place indoors. Supply varies over time and by location, and marketers often try to extend their seasons to periods with lower production and higher prices, sometimes by producing or marketing from more than one location. Trade is critical for shippers to ensure smoother year-round supply. An increasingly integrated North American greenhouse tomato industry has developed, providing the variety of tomato products that consumers demand throughout the year. Leading greenhouse marketers are investing in brands and promotional expenditures, making it even more critical to source from other regions, where necessary, to achieve year-round supply.

Between 1998 and 2003, North American greenhouse tomato area grew 160 percent and production grew 103 percent, reflecting the emergence of the lower technology and lower yield Mexican industry. While growth in the Canadian and U.S. industries has been stabilizing, the Mexican industry continues to expand.

Despite the rapid growth in greenhouse tomatoes, the fresh field tomato industry, led by mature green tomatoes, still dominates U.S. foodservice channels, which represent around half of total fresh tomato consumption. Greater demand for mature green, roma, and grape tomatoes in foodservice channels enabled the U.S. field grown round tomato industry to expand production by 17 percent between 1990 and 2002.<sup>31</sup> The main impact of greenhouse tomatoes has been felt in retail channels, where greenhouse products now account for around 37 percent of the quantity of fresh tomatoes sold, and 39 percent of the value. Retail field tomato sales increased through 2001 but now have begun to decrease, with greenhouse and grape tomatoes substituting for round field tomato sales, mature green in particular. Vine ripe tomatoes have increased market share at retail, competing effectively against mature green tomatoes and acting as a substitute for beefsteak tomatoes during periods of short greenhouse supply.

The outlook for the U.S. mature green tomato industry depends on continued strong growth in foodservice demand. If foodservice demand falters, fresh field tomato growers would need to consider other alternatives, with serious structural adjustments likely. For example, growers could diversify into the greenhouse industry, either through alliances with existing producers or through direct investment. To date, field tomato growers have

<sup>31</sup> Production in 2003 was slightly higher than in 1990, but since 2003 was an abnormal year for production due to weather problems, 2002 is a more appropriate year for comparison.

not considered the greenhouse industry an attractive alternative. Greenhouse tomato production is very capital- and technology-intensive, and rapid expansion was accompanied by mixed profitability results. Currently, none of the U.S. field growers operate greenhouses in the U.S., although at least one is marketing Mexican greenhouse tomatoes. Alternatively, growers could attempt to reposition field tomatoes through new varieties, products, and packs with more commercial appeal, such as the highly successful grape and heirloom tomatoes. Round field tomato growers may also decrease their reliance on marketing intermediaries (repackers and wholesalers) and develop more direct marketing relationships with retailers, part of the trend toward supply chain management and streamlining the distribution system. Becoming more integral supply chain partners could help growers compete for retail market share.

Greenhouse production can be seen as just one more development in a trend towards better quality and more diversified tomato offerings—vine ripe, organic, cherry, grape, pear, various colors—and part of the general trend toward growth in value-added produce. However, greenhouse tomatoes have now grown to the point where they can be described as a commodity, a common development in the world of fresh produce. For specialty niche products with limited supply, it is generally easier to command consistently high prices, in part because buyers place less emphasis on aggressive price negotiations with products that are not major contributors to the bottom line. With greenhouse tomatoes now a critical component of overall tomato category profitability, price plays a more important role in making the sale. This is particularly true in the summer when both greenhouse and field tomato supply are typically abundant.

In summer 2004, expanded North American greenhouse tomato production caused greenhouse prices to plummet. Faced with an eroding FOB price premium for greenhouse relative to field tomatoes, many retailers were unwilling to stock field tomatoes. Hence, field tomato prices fell even though field supply was at relatively normal levels for that time of year. In contrast, only a short time later in fall 2004, scarce field tomato volume created a shortage in total fresh tomato supply, causing both field and greenhouse tomato prices to soar. Clearly, as greenhouse tomatoes garner a larger share of total fresh tomato volume, changes in either greenhouse or field tomato volumes can greatly impact total fresh tomato supply, and in turn, prices for both.

It may be more difficult for the highly capitalized greenhouse tomato industry to withstand long periods of low prices, compared with the less capital-intensive field tomato industry. Although the summer field tomato industry also faces gluts, shipping volumes are staggered and weather- and disease-induced periods of short supply that act as market corrections are common. As indoor producers, greenhouse growers experience much greater consistency in production volumes throughout the season. The emergence of more North American greenhouse growers producing simultaneously over an extended spring through fall season will mean continued price pressure. However, in periods of (weather- or disease-induced) short field supply, such as fall 2004, greenhouse producers are best positioned to benefit, receiving exceptionally high prices. These trends put greenhouse growers in

a more similar position to field growers than many might have thought even a short time ago—still very much weather dependent and affected by large price swings—despite the fact that their tomatoes are grown indoors.

## Where Is the Industry Headed?

The North American greenhouse industry is still in a state of flux, with firms trying to identify the most profitable combination of locations, technology, and marketing alliances to meet market demand in different seasons. Unfortunately, miscalculations by firms are expensive. There has been rapid turnover in greenhouses in the United States as marketers attempted to realign their supply to improve profitability. With the greenhouse tomato industry growing so rapidly and undergoing so much structural change, it is difficult to predict what the industry will look like in the near future.

Some industry analysts believe North America will move to the northern European system, where fresh tomato consumption is almost entirely greenhouse. But in North America, there are relatively low-priced field grown tomatoes available year-round. Shifting to the European model would require a massive consumer preference for greenhouse tomatoes over field tomatoes and a willingness to pay higher prices. On the other hand, greenhouse production has grown to the point where it can no longer be considered a fad. Growers have made significant investments and it is likely that there will always be demand for greenhouse tomatoes, just as demand for all kinds of value-added fresh produce is growing. As long as TOVs are popular and only greenhouse varieties are available, greenhouse tomato demand will be strong. The most likely scenario is a fresh tomato industry providing both field and greenhouse tomatoes, with greenhouse tomatoes continuing to erode the field tomato share of retail sales, and mature greens the most affected. The growth paths of the two types of tomatoes depend on consumer preferences and relative profitability of greenhouse and open field production.

## Canada

Will Canada's greenhouse tomato industry continue to expand? There has been very little expansion in Canadian tomatoes over the last few years. However, some of the recent expansion in area for other greenhouse vegetables could shift easily to tomatoes if prices warranted. The Canadian greenhouse industry's advantages include a climate that contributes to the highest summer yields in North America and powerful industry clusters supported by excellent infrastructure, technology, capital, and management. However, the future of the two lead players, Ontario and British Columbia, may not be the same due to differences in their relative competitiveness. Although Ontario has an advantage in geographic proximity to major Eastern markets, British Columbia has a yield advantage and proximity to the West coast market. British Columbia's yield advantage originates from its mild climate, whereas Ontario faces late summer production problems caused by heat and humidity. British Columbia currently has a more concentrated marketing structure than Ontario that may help in meeting the needs of large buyers. On the other hand, Ontario's marketing structure is becoming less fragmented. The relative growth rates of regional markets for greenhouse tomatoes, and landed costs into these markets will be major determinants of inter-provincial competitive-

ness. The major weakness of the Canadian industry as a whole is the lack of winter production. Producing winter tomatoes in Canada would require expensive lighting systems, a technology that is not currently profitable for most growers. For now, Canadian firms must seek alliances with U.S. or Mexican firms in warmer climates to provide winter supplies of tomatoes.

### ***United States***

The primary advantage of the U.S. greenhouse tomato industry is that it can produce year-round, which enables it to capitalize on the higher priced winter market, unlike Canada. For U.S. greenhouse tomato firms, the expansion of North American summer supply has made them even more dependent on high winter prices to achieve year-round profitability. However, just as expanded Canadian exports eroded profitability for U.S. greenhouse firms during the summer months, future Mexican expansion could have a similar impact on U.S. firms producing during the winter. Furthermore, growing summer export volumes from Mexico may contribute to further erosion in average summer FOB pricing. However, an unassailable advantage of U.S. producers is that they enjoy the largest domestic market for greenhouse tomatoes in North America and face no trade barriers in this market. A potential disadvantage is that the United States does not have as strong an input supply infrastructure as in British Columbia and Ontario, where input firms are servicing homogeneous and geographically concentrated industries. Some U.S. firms are in relatively isolated locations, with less readily available services and the need for tailored varieties. On the other hand, isolation does reduce vulnerability to pest outbreaks and pressures from urbanization.

### ***Mexico***

The Mexican greenhouse tomato industry is still identifying the best locations and technology packages. There have been some costly errors, but greater experience with site selection, technology, management, and marketing is improving performance and raising the competitive bar. New industry entrants must shorten their learning curve as North American volume increases in all seasons. Mexico has the opportunity to substantially increase competition with the United States in the winter market, in particular. Whether it will meet that challenge remains to be seen. Mexico's industry has several disadvantages. Its more limited access to capital and substantially higher capital costs puts a serious constraint on an industry that relies on very large capital outlays.

The North American greenhouse industry is anxious for Mexico to develop a more uniform product quality. Otherwise, quality problems will undermine orderly marketing and U.S. and Canadian efforts to augment their off-season supplies. If the North American fresh tomato industry continues to provide a mix of greenhouse and field in the future, Mexican producers may be in the best position to service both needs since it is the only place where large shippers grow both field and greenhouse tomatoes. Sinaloa, Mexico, is North America's largest producer of vine ripe tomatoes, and these are the preferred type of round tomato within retail channels. Decisions made by powerful Sinaloa (and to a lesser extent Baja California) shippers, producing

both field and greenhouse tomatoes, are a key factor in the evolution of the Mexican fresh tomato industry. Their rate of transition from field to greenhouse production depends on relative yields, prices, and risks in these two tomato categories.

Independent, greenhouse-only tomato producers in central Mexico must be willing and able to invest in high-technology systems. Their future competitiveness depends on their ability to optimize location choices to facilitate extending shipping seasons, increasing yields, lowering per unit costs, and improving quality. They must also produce the right product mix and participate in strong marketing arrangements, either via alliances with U.S. and Canadian firms or partnerships with forward-integrated Mexican field tomato shippers that have diversified into greenhouse, or by investing in forward-integration with Mexican greenhouse partners. However it is achieved, consolidated shipping volumes and orderly marketing will be a critical factor in the Mexican industry's success.