

An Overview of the U.S. Bell Pepper Industry

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Bell pepper is one of the most widely cultivated vegetable crops in the world. Characterized by a glossy exterior of different colors including green, red, yellow, purple, and orange, bell pepper is a warm season crop grown in temperate regions. Over the last decade, the world production and consumption of bell peppers have been steadily increasing. More than 70% of the world's bell peppers are produced in Asia (FAO, 2017). China is the largest producer of bell peppers followed by Mexico and Indonesia. The other major players in the bell pepper market are Turkey, Spain, and the United States.

US Bell Pepper Production

Bell peppers are widely grown all over the United States. The majority of bell peppers are produced in the open field on raised beds using drip irrigation and mulch. The U.S. total bell pepper acreage was 62,080 acres in 2000, but it has been decreasing over time. The total harvested acreage reduced to 40,900 acres in 2015 (Figure 1). California, Florida and Georgia are the three largest bell pepper producing states. Figure 2 presents the harvested acreage of the three states between 2000 and 2015. The acreage in Florida has shown a prominent declining trend. The main reasons for the decline were increased market competition from Mexico and the ban on the use of methyl bromide, the most effective soil fumigant that has an ozone depleting effect. The harvested acreage in Florida was 18,400 acres in 2000 but it declined to 12,200 acres in 2015. The California acreage did not see significant changes. The harvested acreage in California was around 21,000 acres in 2000, dropped to 18,500 acres in 2003, then reached the highest level of 23,000 acres in 2005 and declined to 19,500 acres in 2015. The acreage in Georgia was relatively stable during the period.

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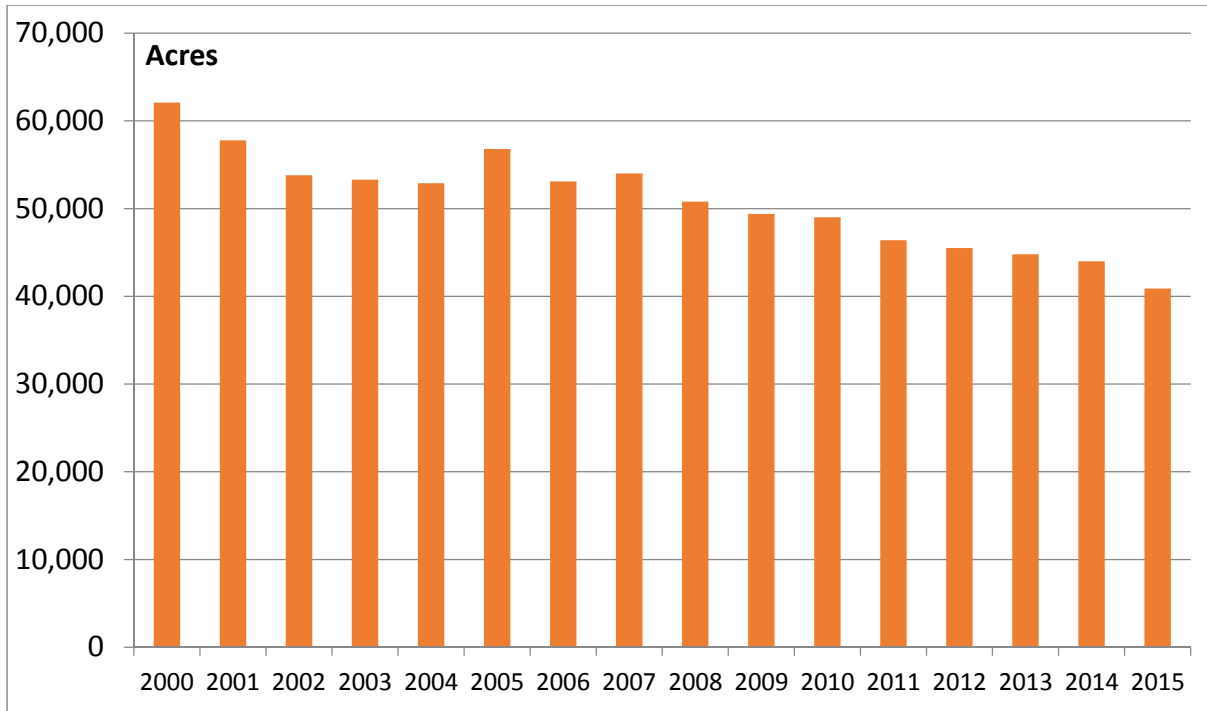


Figure 1: US bell pepper harvested acreage, 2000 to 2015
 Source: USDA, NASS

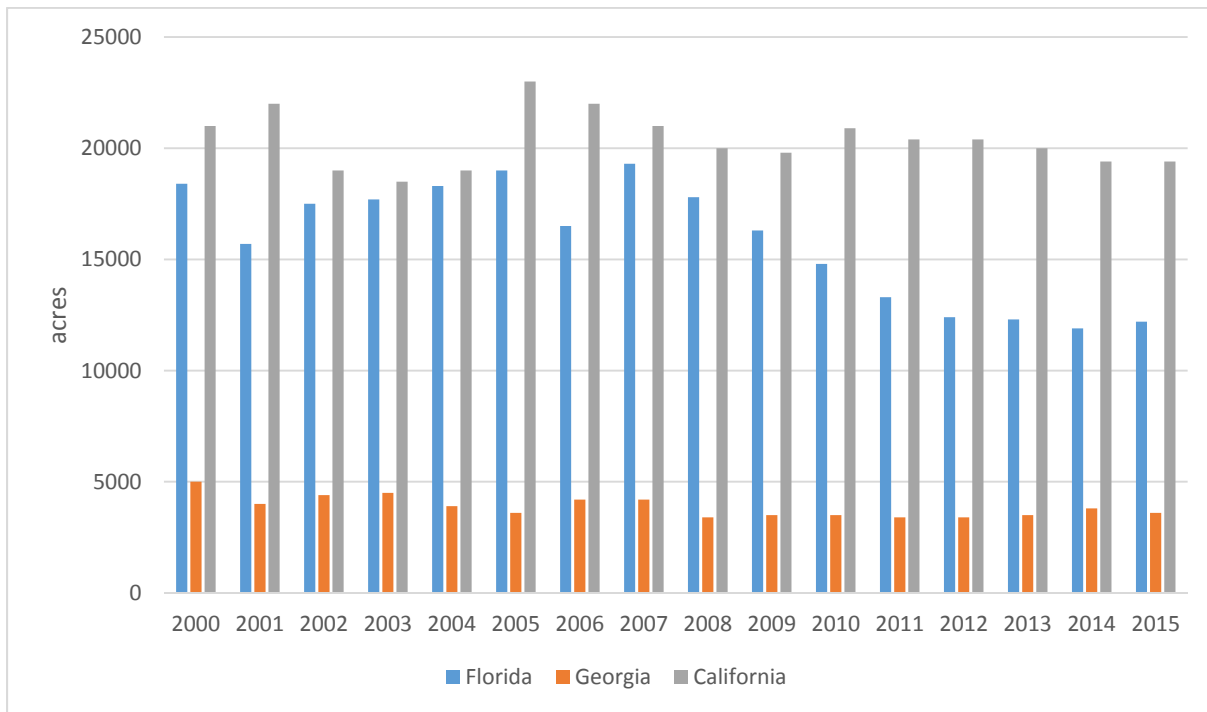


Figure 2: Bell pepper harvested acreages in three major producing states, 2000 to 2015
 Source: USDA, NASS

The US bell pepper production saw some fluctuations between 2000 and 2015, but overall the total production did not show significant changes (Figure 3). Although the acreage decreased over the years, increasing yields have kept the overall production at approximately the same level. In 2000, the total production was approximately 1.69 billion pounds. It declined to 1.4 billion pounds in 2003 and then rebounded to 1.65 billion pounds in 2015. Production of bell pepper has been a major economic contribution to Florida and California’s vegetable industry. Florida and California produced similar amounts of bell peppers in 2000. But by 2015, California produced twice as much as Florida (Figure 4). The decreasing Florida production is consistent with its declining acreage as a result of increasing imports from Mexico and various production challenges. The bell pepper production in Georgia is significantly lower compared with those of California and Florida. In 2000, 85 million pounds of bell peppers were produced in Georgia while in 2015 the production was approximately 100 million pounds.

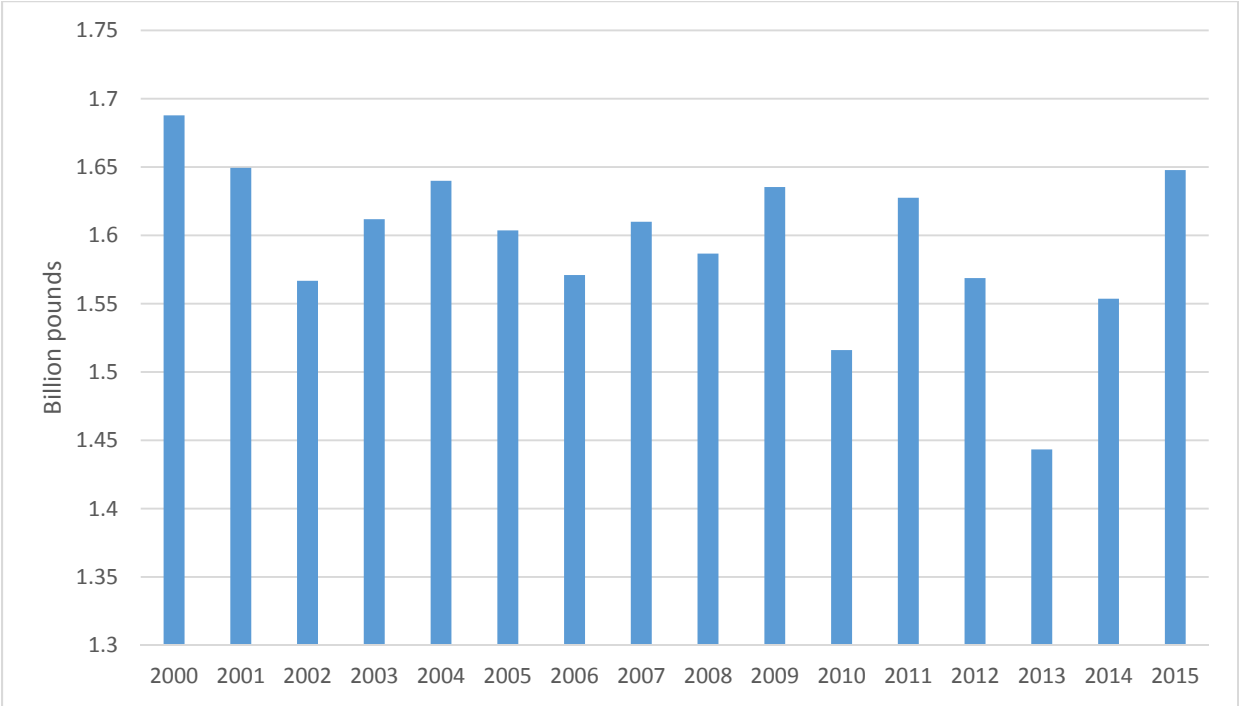


Figure 3: Total U.S. bell pepper production, 2000 to 2015
 Source: USDA, NASS

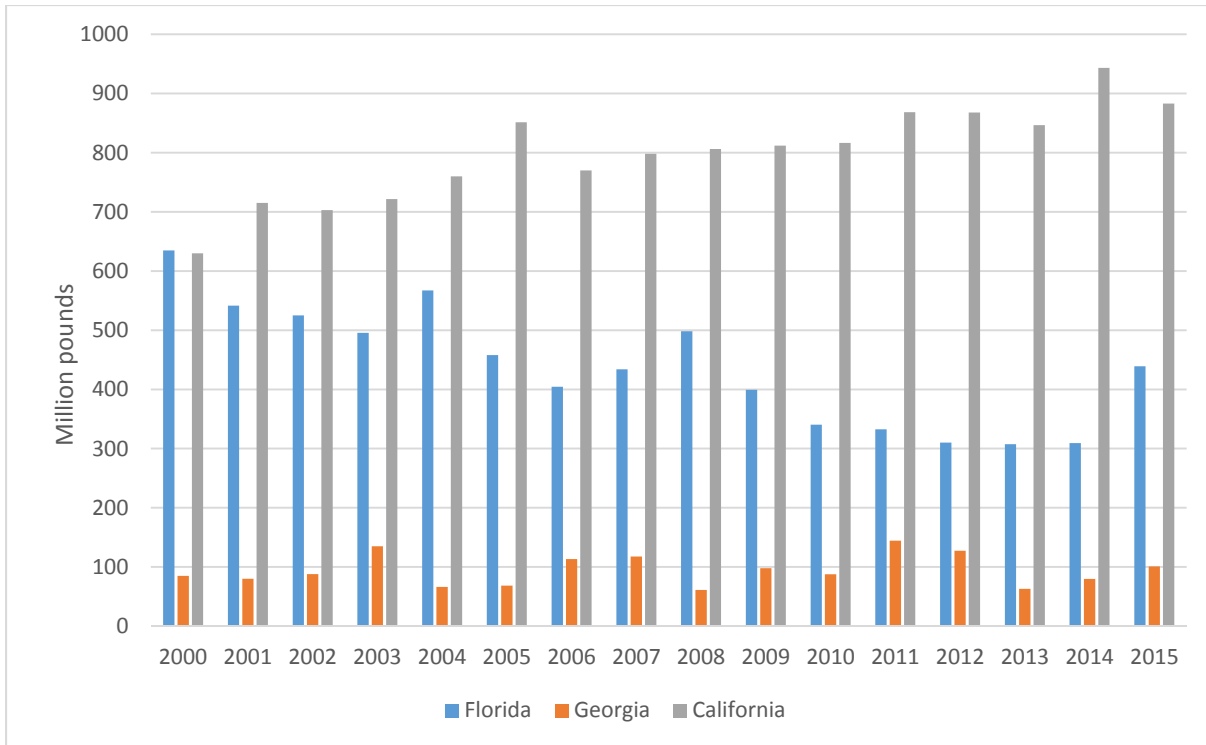


Figure 4: Total production of bell pepper in three major producing states, 2000 to 2015
 Source: USDA, NASS

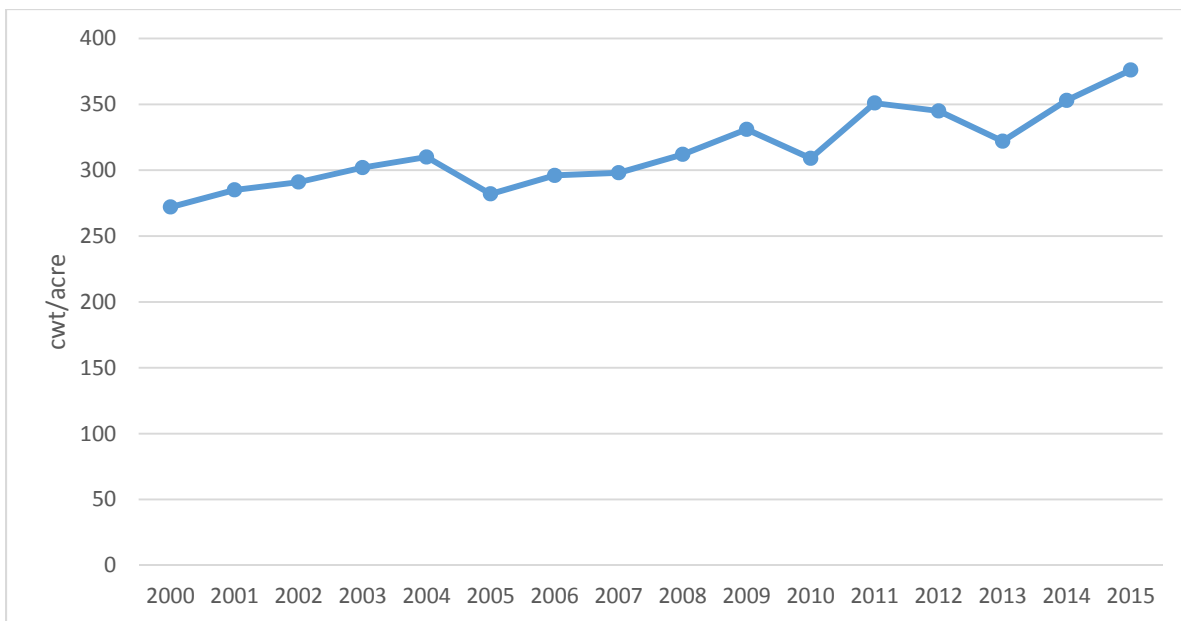


Figure 5: US bell pepper yield, 2000 to 2015
 Source: USDA, NASS

US bell pepper yield followed a steady increasing trend. In 2000 around 272 cwt (hundred weight) of bell peppers were produced per acre. In 2015, the value increased to 376 cwt per acre (Figure 5). Although yield in all the three states have shown upward trends, the yield increase in Florida was significantly behind California and Georgia. The yield in Florida was 360 cwt per care, up 4% from the average in 2000, while the yields in California and Georgia were 455 and 280, up 52% and 65% from their respective averages in 2000. Florida bell pepper production has faced various challenges in recent years, particularly challenges in pest and disease management because of the phase-out of the methyl bromide soil fumigant.

Bell Pepper Prices

Bell pepper prices in the United States showed large variations across years, most of which was caused by weather changes. Bell pepper imports from Mexico have been another factor behind price fluctuations. Figure 6 shows the movement of prices of fresh market bell peepers in the U.S. and Florida over 2000 to 2015. The U.S. bell pepper price followed a gradually increasing trend. The price in 2015 was \$48.3 per cwt, up from \$31.5 per cwt in 2000. The Florida average price was always higher than the national average because of its early production season. A price spike of Florida bell peppers occurred in 2010 (Figure 6) as supplies were reduced by an unusually long period of freezing events during early to mid-January.

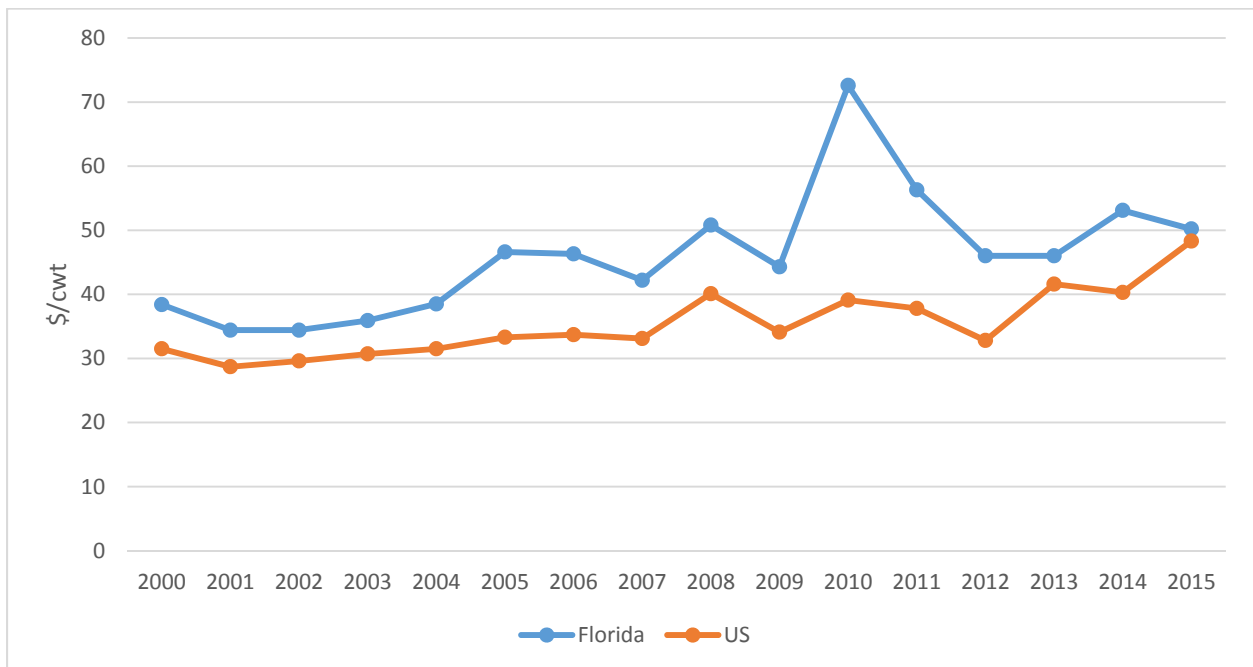


Figure 6: Average bell pepper prices in the US and Florida, 2000 to 2015

Source: USDA, NASS

US Bell Pepper Trade

Although the United States is one of the largest producers of bell peppers in the world, imports comprise a large portion of the total U.S. consumption. In 2000, the total import was only 436 million pounds, whereas in 2015 it increased more than threefold to 1,421 million pounds (Figure 7). The majority of bell pepper imports come from Mexico. In 2000, imports from Mexico accounted for about 72% of total bell pepper imports; and in 2011, imports from Mexico accounted for 87% of the total imports. Mexico is the second largest producer of bell peppers worldwide and has a significant impact on the U.S. bell pepper market. Lower labor costs (Wu, Guan, and Garcia-Nazariaga, 2017) and the devaluation of Mexican peso gave Mexican exporters a competitive edge over their U.S. counterparts. At the same time, government support in protected culture (Victoria et al., 2011) also contributed to the growth of the industry and allows Mexican growers to supply bell pepper year round to the U.S. market by extending the regular growing season.

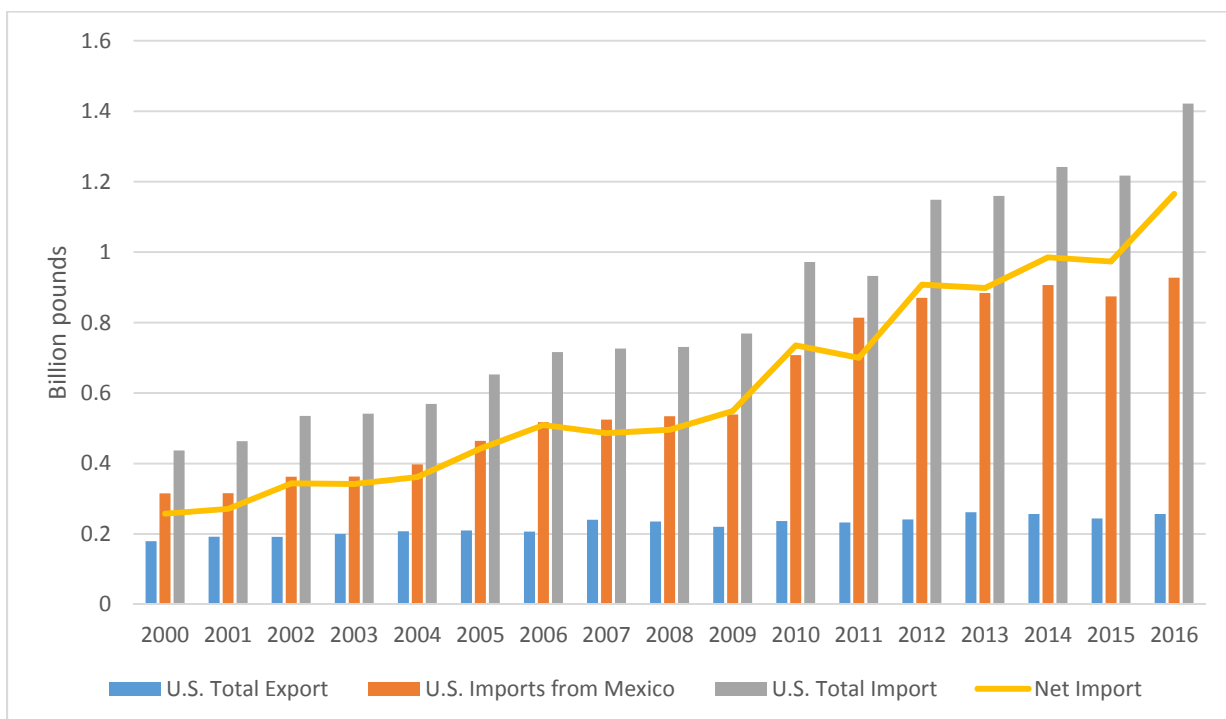


Figure 7: US bell pepper trade, 2000 to 2016

Source: USDA, NASS; FAS

U.S. bell pepper exports are significantly lower than imports. In the last fifteen years, U.S. bell pepper exports have been relatively stable. In 2000, the U.S. bell pepper export volume

was approximately 180 million pounds, and it increased to 256 million pounds in 2016. The main export destinations include Canada, Japan, Germany, and United Kingdom.

Concluding Remarks

This study provides an overview of the U.S bell pepper industry. The total acreage of the U.S. bell pepper industry has decreased by one third since 2000. The declining trend is most significant for the Florida bell pepper industry. The competition from Mexico and various production challenges were among the main reasons. The NAFTA free trade agreement and the popularity of protected culture promoted by the Mexican government have contributed to the rapid growth of the Mexican bell pepper industry and its market share in the U.S. market. The imports from Mexico increased threefold in the last 15 years. Increasing market competition and production costs have affected the profitability of the U.S. growers, particularly that of Florida growers. The same pattern has been observed in other fruit and vegetable industries in the U.S., such as the strawberry (Suh, Guan, and Khachatryan, 2017; Guan et al., 2017) and tomato industries (Wu, Guan, and Suh, 2017; Guan, Biswas, and Wu, 2017).

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