



Economic Impacts of Greening on the Texas Citrus Industry, CNAS Issue Brief 2007-01

February 12, 2007

Introduction

Greening is a serious threat to the Texas citrus industry. Citrus greening, an insect borne bacteria, was first documented in India in the 1700s and China in the early 1900s. It is spread by two species of citrus psyllid, Asian and African. The Asian psyllid was discovered in Florida in 1998 and Texas in 2001. Greening was discovered in Florida in 2005, but due to the latent nature of infestation, it was likely introduced a few years before. The Asian psyllid is widespread in Texas, but the disease has not yet been discovered. Greening could threaten the Texas citrus industry if effective treatments and controls are not developed. The bacteria renders infected trees useless and reduces the marketability of citrus because the fruit is small, misshapen and remains green, and the juice is bitter. Trees normally die within 3-5 years after infection is detected. There is currently no known cure for greening and the only treatment is control of the citrus psyllid or removal of infected trees. Greening has also been found in Asia, Africa, the Arabian Peninsula, and Brazil. The bacteria is not harmful to humans.

Texas commercial citrus production was valued at \$74 million in 2006 and averaged \$81.3 million over the last two seasons. Production is located in the Lower Rio Grande Valley, with Hidalgo county accounting for about 88 percent of Texas bearing acres in 2002. Texas is the third largest citrus producing state behind Florida and California.

The economic impacts of greening on the Texas commercial citrus industry were estimated using IMPLAN. Economic multipliers for each sector of the economy were used to estimate how a change in one sector affects business activity, income and employment in other sectors of the economy that supply inputs and services to the citrus industry. Baseline economic impacts were estimated for the value of annual average Texas citrus production for the crop years of 2004/05 and 2005/06.

Current Situation and Economic Baseline

IMPLAN estimates indicate that total business activity required to support the Texas citrus industry was \$121.3 million annually. This includes post farm-gate business activity of \$41.9 million and farm level business activity of \$79.4 million. Farm and related sector income generated by citrus production was \$50.9 million, while another \$24.5 million was generated off farm in transportation, handling, processing and marketing. Total employment associated with the Texas citrus industry was estimated to be 1,911 jobs. Farm employment represented 1,217 of those jobs. The balance of employment, 694 jobs, is located in non-farm sectors of the Texas economy. The most important non-farm sectors are: agriculture support services such as sorting, grading, cleaning and packing, 287 jobs; food and beverages, 59 jobs; medical services, 55 jobs; and wholesale trade, 24 jobs.

Significant indirect spending associated with the Texas citrus industry is dispersed over numerous sectors supplying goods and services required to support the production and marketing of fresh and processed citrus in Texas. Business activity associated with the most important supporting sectors is: agriculture support activities, \$7.2 million; wholesale trade, \$2.6 million; real estate, \$1.2 million; truck transportation, \$760 thousand; and farm machinery, \$215 thousand. Health care services at \$4 million, food and beverage sales at \$2.6 million, and insurance and banking services at \$2 million, are supported by household incomes generated from economic activity associated with the Texas citrus industry.

Potential Economic Impacts of Citrus Greening

Industry experts estimate that infestations of citrus greening may reduce the value of Texas citrus production by 20 percent after two years of infestation and up to 60 percent after five years. Sustained production losses at these levels would have substantial economic impacts on Texas. The following summarizes the economic losses attributed to each level of loss. These results assume no action is taken to reduce the presence of the citrus psyllid or to otherwise mitigate the effects of greening.

20 Percent Reduction in Citrus Production Value

After two years of infestation, losses in business activity associated with a 20 percent reduction in citrus production value would be \$23.7 million. Of this total, \$15.5 million would be losses of farm level economic activity supporting citrus production. An additional \$8.2 million in business activity would be lost in associated non-farm activities. Total income losses would be \$14.7 million, with \$9.9 million in losses occurring in farming and related activities and another \$4.8 million in non-farm activities. Total job losses are estimated to reach 373, with farm job losses of 237 and non-farm job losses of 136.

Non-farm losses of business activity are estimated to be substantial and are due to reduced income associated with lost employment. About \$791 thousand in lost sales would occur throughout the medical sectors and \$144 thousand in the food/beverage sector. Real estate losses would reach \$233 thousand, while losses to banking and insurance would exceed \$378 thousand. Food service losses would be about \$362 thousand. Losses in business activity attributable to reduced citrus sales by farmers would be largest in agriculture support activities, \$1.4 million. Losses in wholesale trade would be about \$500,000.

60 Percent Reduction in Citrus Production Value

After five years of infestation, greening would reduce citrus production value by an estimated 60 percent. Total business activity would decline by \$68.5 million, while income would fall by an additional \$42.6 million. Total job losses would reach 1,080. Business activity associated with agriculture support activities is estimated to decline \$4.1 million, the largest losses of any single sector. About \$3.5 million would be lost in real estate. Medical service business activity would decline \$1.7 million and food service \$1.4 million. Greenhouse/nursery would fall \$128,000 while farm machinery and equipment would drop \$121,000. Job losses in citrus production would reach 688, while agriculture support activity would lose 162 jobs.

These potential economic impacts on the Texas citrus industry represent what could occur if greening emerges and is not controlled and eventually eliminated. Greening can result in the complete loss of citrus trees and associated acreage resulting in loss of specialized infrastructure and leading to the decline of the entire industry. If this occurs, the economic impacts would be more severe, leading to greater losses in business activity, income and employment.

Prepared at the request of Texas Citrus Mutual. For further information, please contact Parr Rosson, Extension Economist and Director, Center for North American Studies, Department of Agricultural Economics, Texas A&M University, College Station, Texas 77843-2124. Telephone 979-845-3070 or e-mail prosson@tamu.edu. Contributing to this report were Michelle Niemeyer, Extension Program Specialist, Marco Palma, Extension Economist-Horticultural Marketing, Luis Ribera, Extension Economist-Management, and Flynn Adcock, International Program Coordinator.