

Economic Impacts of Zebra Chip on Texas

CNAS Issue Brief 2009-01

January 27, 2009



Introduction

The value of Texas potato production was estimated at \$84.2 million in 2008 and averaged \$84.7 million annually from 2006-2008 (Texas Agricultural Statistics and industry reports). Production was concentrated in four major regions of the state: The Northern High Plains (36%), Southern High Plains (13%), South Texas (32%) and the Lower Rio Grande Valley (18%).

Zebra chip is a pathogen believed to be spread by insects and has infested Texas growing regions since 2000. It became more prevalent in 2001, and continues to be problematic. Zebra chip reduces the marketability of potatoes because it causes brown stripes to appear, particularly when potatoes are processed into chips. Losses on some individual farms have exceeded \$2.0 million annually during recent seasons. There are concerns that this condition could become more widespread if treatments and controls are not found and adopted.

The economic impacts of Zebra chip on the Texas potato industry were estimated using IMPLAN. This model utilizes economic multipliers for each sector of the economy to estimate how a change in one sector affects business activity, value-added and employment in other sectors of the economy that supply inputs and services to the potato sector. Baseline economic impacts were estimated for the value of annual average Texas potato production for the period 2006-2008.

Current Situation and Economic Baseline

IMPLAN estimates indicate that total business activity required to support the Texas potato industry was \$300 million annually for the period 2006-2008. This includes farm level business activity of \$133.6 million plus an additional \$166.4 million beyond the farm gate. Farm and related sector value-added generated by potato production was \$71.5 million, while another \$101.2 million was generated off the farm to support transportation, handling, processing and marketing. Total employment associated with the Texas potato industry was estimated to be 2,762 jobs. Farm employment represents 557 of those jobs. The balance of employment, 1,466 jobs, is located in non-farm sectors of the Texas economy. The most important sectors are food and beverages (870), agriculture support services such as sorting, grading, cleaning and packing (291), wholesale trade (210) and truck transportation (157).

Significant indirect spending credited to Texas potato production is scattered over numerous industries supplying goods and services required to produce and market potatoes. Business activity of the most important supporting sectors are wholesale trade (\$41.1 million), real estate (\$22.5 million), truck transportation (\$20.0 million), petroleum (\$10.0 million), agriculture support activities (\$6.8 million), and pesticide manufacturing (\$6.0 million). Food and beverage sales (\$53.5 million), insurance and banking services (\$8.8 million) and health care (\$5.3 million) are supported by household incomes generated from economic activity related to the Texas potato industry.

The Northern High Plains potato production supports business activity of \$52.0 million, value-added of \$27.4 million and 293 jobs. For South Texas, business activity associated with potatoes is \$43.6 million, value-added is \$23.2 million and there are 479 jobs. The Lower Rio Grande Valley has business activity of \$20.4 million, value-added of \$11.3 million and 247 jobs attributable to potato production. Southern High Plains potato production supports business activity of \$17.6 million, value-added of \$9.6 million and 140 jobs.

Economic Impacts of Zebra Chip

Industry experts estimate that infestations of Zebra chip could readily affect 35-40 percent of Texas potato acreage. Calculated estimates indicate that about 38 percent of Texas acreage could be lost or sold at reduced prices attributable to increased presence of Zebra chip. This level of damage would result in a loss of about 7,500 acres of potatoes in Texas. Using the three-year average yield of 365 hundred weight per acre indicates that 2,737 thousand hundred weight would either be left in the field or sold for starch at prices discounted by about 90 percent. Applying average Texas potato prices for the period 2006-2008 (\$12.20/cwt), results in a loss in the value of Texas potato production of \$33.4 million annually.

Sustained production losses at this level would have substantial economic impacts on Texas. Losses in business activity associated with potato production would be \$117 million. Of this total, \$50.8 million would be losses of farm level economic activity supporting potato production. An additional \$63.2 million in business activity would be lost in associated non-farm activities. Total value-added losses would be \$65.7 million, with \$27.2 million occurring in farming activities and another \$8.5 million in non-farm activities. Total job losses are estimated to reach 1,050, with farm job losses of 441 and non-farm job losses of 609.

Non-farm losses of business activity are estimated to be substantial and are due to reduced income associated with lost employment. About \$18.7 million in lost sales would occur in the food/beverage sector. Losses in wholesale trade would be \$14.6 million while truck transportation losses would exceed \$7.7 million and real estate about \$5.6 million. Petroleum losses would reach \$3.8 million, and losses to each sector-medical services, banking, insurance and food service would range from \$1.7 to \$2.0 million.

Losses in business activity attributable to reduced potato sales by farmers would be largest in wholesale trade, \$1.2 million. Losses in agriculture support activities would be about \$2.6 million, while losses in pesticide sales and other chemicals would reach \$1.0 million.

Of the 609 jobs that would be lost beyond the farm gate, the food and beverage sector would lose 321 jobs, while wholesale trade would lose 72 jobs. Truck transportation and agriculture support services would lose 57 and 52 jobs, respectively. Medical service employment would decline by 26 jobs with about 20 jobs lost in each of the following sectors: real estate, restaurants, medical services.

These economic impacts represent what could occur in Texas if Zebra chip is not controlled and eventually eliminated in Texas. It appears likely that the condition could become more prevalent in the southern parts of Texas and in some regions may result in a complete loss of potato acreage. If this occurs, the economic impacts would be more severe, leading to greater losses in business activity and employment.



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