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The Economic Impact of the This Spring's Weather on the Fruit and Vegetable Sectors

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Background

There has been extensive damage to Michigan's fruit crops and to a lesser degree Michigan's asparagus crop as a result of abnormally warm weather in the middle of March followed by more seasonal temperatures in in late March and April. The warm weather caused premature budding of fruits and the freezes that followed destroyed blooms and early developing fruit.

This paper provides a brief analysis of the potential economic impact of the damage to the fruit and asparagus sector has been. IMPLAN, a standard economic impact software package is used to generate the results. It should be noted that the results are somewhat preliminary. A full understanding of the size and scope of the crop failure will become more apparent with the passage of time. It should also be noted that IMPLAN assumes that the processing industries will for the most part be able to find enough product to make up for the lost Michigan fruit and vegetable. If that is not the case these figures will understate the total economic loss from the reduced production in Michigan. The estimate does not consider the impact of price on the affected commodities. If prices rise then the adverse economic impact will be somewhat offset by the higher prices.

Results

A five year average from 2006 to 2010 for Michigan sales of apples, blueberries, grapes, peaches, sweet cherries, tart cherries and asparagus was used for the baseline. The percentage of crop lost was used to generate the estimate of the value of the crop lost due to weather. IMPLAN was then used to generate the economic impact of the crop loss on the overall economy.

The results are shown in table 1 below.

Table 1: Economic Impact of Crop Damage Spring 2012

Crop	Average of 2006-2010 ($ thousands)	Estimated Percent Lost	Estimated Loss ($ thousands)	Economic Impact of Loss ($ thousands)
Apples	120,582	0.90	108,524	260,625
Blueberries	135,052	0.15	20,258	48,650
Grapes	20,273	0.85	17,232	41,384
Peaches	12,644	0.95	12,012	28,847
Sweet Cherries	14,555	0.80	11,644	27,964
Tart Cherries	42,775	0.90	38,498	92,454
Asparagus	15,995	0.10	1,600	2,941
Total	**361,876**		**209,766**	**502,864**

Sources: Michigan Agricultural Statistics Service, Irish-Brown and Schwallier

These figures indicate the scale of the damage. From 2006 to 2010 the average sales generated by these commodities was $361.9 million. Using these figures as a base, the estimated loss is 58 percent of the 2006-2010 average, or $209.8 million. IMPLAN is used to estimate the total economic impact of the crop loss. The total economic impact of the crop loss is $502.9 million. This means that the level of output of goods and services in Michigan will be expected to decline by about $503 million compared to 2006-2010 as a result of the crop loss. This figure may change as the season progresses and the true scope of the loss becomes more apparent.

It should be noted that the economic impact figure may understate the total loss because IMPLAN assumes that processors will be able to find a sufficient amount of raw product to keep their manufacturing plants in operation. If this is not the case, the economic impact will be greater.

This analysis also does not consider the impacts on prices of the impacted commodities. If prices rise the negative impact will be offset somewhat. It does appear that tart cherry prices will increase. Grape prices and sweet cherry prices may also increase. The price impacts for the other commodities will be smaller.

Sources

Irish-Brown, A. and P. Schwallier. *Key Talking Points Related to the 2012 Michigan Freeze Disaster of Perennial Fruit Crops*. May 18, 2012.

Michigan Agricultural Statistics Service. *Michigan Agricultural Statistics 2010-2011*. Lansing: Michigan Department of Agriculture and Rural Development, 2011.