

Economic impact of loss of oxytetracycline for control of fire blight on organic apples and pears

[Note: this is a rough estimate and has not been peer reviewed]

Data from 2008 USDA-NASS Organic Production Survey.

	<u>US</u>	<u>WA</u>
Organic apples		
(acres)	20,009	13,005
(million lbs)	488.2	425.3
(\$ value, million)	136.8	118.9
Organic pears		
(acres)	2,145	1,319
(tons)	21,879	17,169
(\$ value, million)	16.2	12.8

Washington State is the major producer of both organic apples and pears. It has 65% of the organic apple acres, producing 87% of the fruit volume and farm gate sales value. It also has 61% of the organic pear acres, producing 78% of the fruit volume and farm gate sales value.

Growers are concerned about the loss of the antibiotics oxytetracycline and streptomycin for control of fire blight in organic apples and pears. The USDA is currently reviewing a rule to phase out oxytetracycline in October 2014. The evidence for the availability of effective suitable replacement controls is not clear. The loss of oxytetracycline will disproportionately affect Washington State growers, as they use it but not streptomycin. Since the state is the major producer of organic apples and pears in the US, the loss of this material could dramatically impact domestic production and supply. Organic growers in Washington State were surveyed about their likely response to the loss of oxytetracycline in 2010 and 2011 (Figure 1). Only 20-25% of the growers said such a loss would have little or no effect. When asked if they could effectively control fire blight in a year of high risk (CougarBlight model >700-800) without antibiotics, 82% said no. A similar response came from growers who supply a major Northwest organic produce wholesale company: "According to our apple and pear buyer, the growers of these crops uniformly stated that they would move to conventional production, if tetracycline were disallowed under the NOP. Our growers stated that without a commercially viable alternative to tetracycline they would not only be unable to produce organic fruit, they would be putting the health of their orchards at risk to infection by fire blight, a disease that can has been known to kill large blocks of trees in Pacific Northwest orchards" (12/28/11).

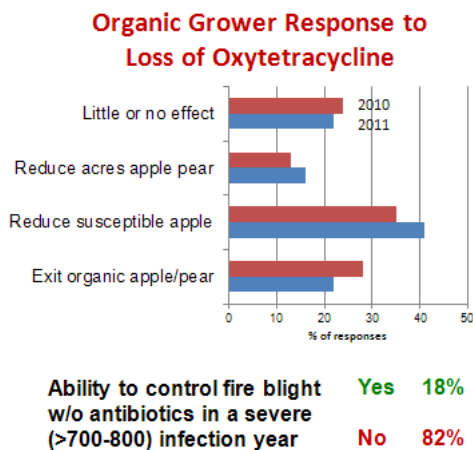
There are two main components of potential economic impact from the loss of antibiotics for control of fire blight: increased costs to control infected blocks, and loss of organic premium income to organic growers. These are estimated using Washington State data only, and can be extrapolated nationally.

1. Increased costs to control infected blocks. Fire blight risk does not occur every year. It is dependent primarily on the combination of temperature and moisture. Infection risk that warrants

treatment may occur every 3 to 5 years for a given block. Infected blocks require additional management measures in terms of cutting out infected wood to prevent further spread in the infected trees and contamination of more of the orchard. This cost was estimated to be at least \$1000 per acre by Tim Smith, a fire blight expert with WSU Extension. With WA organic apple acres at 15,021 (organic plus transition, 2011), and organic pear acres at 2,025 (organic plus transition, 2011), from 3,409 to 5,625 acres would be treated in a given year. Without a suitable antibiotic replacement, 75% of these acres might suffer an infection that would otherwise not occur and thus the growers would incur a collective cost of \$2.6-4.2 million a year for manual control measures.

2. Loss of organic premium. For the 2010 crop, 6.8 million boxes (40 lb) of apples were sold as organic, and 649,000 boxes (44 lb) of pears were sold as organic. Using typical price premiums per box of \$8.06 for organic apples, and \$10.65 for organic pears (average of 2005-2009 crops; Kirby and Granatstein, 2011; <http://www.tfrec.wsu.edu/pdfs/P2191.pdf>), and assuming a conservative 10-20% reduction in supply based on grower survey response (see above), this would equal a loss of premium income of \$6.17-12.34 million per year.
3. The above figures do not include any yield loss from fire blight infected trees and blocks, or costs to replant dead trees or blocks. Nor are losses due to supply disruption to downstream food processors (e.g., sauce, juice, baby food) included.
4. Annual cost for WA growers alone could range from \$8.77-16.54 million per year. This would account for an estimated 80-85% of the national economic impact.

Fig. 1. Washington organic grower response to the loss of oxytetracycline. Results from surveys at winter meetings, 2010 and 2011. D. Granatstein, unpublished.



Grower surveys Feb. 17, 2011, 47 people <http://www.tfrec.wsu.edu/pdfs/P1773.pdf>

Feb. 19, 2010, 60 people

http://csanr.wsu.edu/publications/presentations/Research_Priorities_WE_2010.pdf

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