

SPOTTED WING DROSOPHILA AND THE WASHINGTON BLUEBERRY INDUSTRY

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Five years ago, Washington produced 18 million pounds of blueberries; in 2012 it produced 70 million pounds. The WBC estimates that in five more years it will produce as much as 120 million pounds and be among the largest blueberry growing regions in the world. The Washington blueberry industry simply has no choice but to aggressively develop export markets to help manage supply. Due to its location, quality and quantity of berries available, and the sophistication of the blueberry products Washington produces it is developing an ambitious program to develop export markets. Conversely, the loss of existing export markets would be crippling.

Unfortunately, the recent arrival of the spotted wing drosophila (SWD) into Washington has created a tremendous obstacle to development of export markets. Washington has not had to deal with a serious insect problem in blueberries and more importantly not an insect pest that occurs so close to harvest, with applications having to be made between pickings. As a result of this, Washington growers have had to make many more insecticide applications than ever before and applications closer to harvest. When faced with preharvest intervals, numbers of application limitations and efficacy limitations, growers have limited options. However this situation has resulted in residue issues. Although it is believed that growers with an aggressive SWD program can control the insect and stay under U.S./ tolerances, it was discovered in 2012 that they cannot keep under the MRL limits placed on blueberries by our major export markets.

Just as the Washington blueberry industry was realizing it would have a problem in regards to MRL issues in our export market, Japan detected MRL violations in West Coast blueberries in 2012 for Intrepid (California) and malathion (Oregon). Taiwan detected Sevin and Lannate in blueberries and initiated mandatory testing of blueberries. All of the blueberries were under the U.S. tolerances and there were reasonable assurances that applications were legal and made according to the label, but the blueberry products were violative of Japanese standards. As a result, all fresh blueberry exports to Japan had to be screened for residues. This resulted in a partial shutdown of exports of blueberries because everyone was unsure of residue levels of blueberries. As a result of this latest detection, South Korea stepped up its testing of U.S. blueberries. It is thought that although the violative samples were in fresh blueberries, testing is expected to be expanded to processed blueberries, our larger export market. Because the samples were found at the end of the season, we expect that the more rigorous sampling interval will be extended to the 2013 season. In 2013, blueberries valued in the hundreds and hundreds of thousands of dollars were rejected due to being over the MRL for bifenthrin in Japan, despite being under tolerance in the U.S. This is a very, very serious problem for the U.S. and the Washington blueberry industry.

Eight years ago, there was an estimated 600 acres of organic blueberries in the United States. By the end of 2013, Washington will have in excess of 2,500 acres of organic blueberries and is a leading source of this crop in the world. Acreage of this crop is expanding due to the favorable prices received and the

relatively lack of insect and disease pressure the industry has enjoyed. Approximately 90% of organic blueberries are located in eastern Washington. Prior to 2012, virtually no insecticides or fungicides had been applied to blueberries grown in eastern Washington. [Blueberries produced in western Washington have no significant disease and insect pressure.]

SWD was detected in eastern Washington in 2010 but was not sufficiently widespread, present in sufficient numbers or was not noticed prior to 2012. 2012 was different from previous years. Several growers deployed significant SWD programs; other growers less aware of the pest or less sophisticated in the SWD control programs suffered significant losses due to the insect. Despite increased control efforts directed toward SWD there was increased losses from this insect pest in 2013.

For fresh blueberries detection of a single larvae per pallet results in rejection. Processed blueberries have lower standards, but that are still impossible to meet without a competent SWD control program. Several shipments of blueberries from eastern and western Washington were rejected due to the presence of SWD. The administrator of the Washington Blueberry Commission is under significant pressure to respond to this situation. For conventional growers, there are a number of insecticidal options available and WSU's Lynell Tanigoshi has done a good job of evaluating these products. Unfortunately to date, only a single organically approved insecticide (Entrust, spinosad, Dow AgroSciences) has been demonstrated to have sufficient efficacy against SWD. Organic blueberry growers rely very heavily on this product and the Washington (and California and Oregon) organic blueberry industry are dependent on this product. One of the challenges growers have is that there is a limit on the amount of the product that can be made during the course of the season resulting in growers using lower rates in order to extend coverage throughout the season.

There are anecdotal reports of SWD developing "resistance" and "tolerance" in blueberries in the Watsonville area of California. At the SWD SCRI meeting in Portland on November 8th, Schreiber was shown data by a private berry entomologist that indicated significant lack of control by Entrust and Pyganic in commercial fields. While strong data may be lacking demonstrating resistance in SWD to Entrust, two things are known: 1) Entrust is not working as well as it once did against SWD in the areas where it has been used the longest and 2) such heavy reliance on a single mode of action year after a year in a pest known to develop resistance is a risky situation.