

## **MRLS, MAGNITUDE OF RESIDUES, BLUEBERRIES AND SPOTTED WING DROSOPHILA**

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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. (In November, 2013, the US and Chinese government made a surprise announcement that fresh blueberries would be allowed in to China within 2 to 3 years.) Due to its location, quality and quantity of berries available, and the sophistication of the blueberry products that Washington produces, the industry 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 before and more importantly not an insect pest that occurs so close to harvest, with pesticide applications having to be made between pickings. As a result, Washington growers have had to make more insecticide applications than ever before and applications closer to harvest. When faced with short preharvest intervals, limitations on the number of applications and efficacy limitations, blueberry growers often have limited options. This situation has resulted in many residue related issues. Although it was once 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 for Intrepid (California) and malathion (Oregon) in 2012. 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 in violation 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. In November, 2012, Taiwan detected Sevin and Lannate in blueberries and initiated mandatory testing of blueberries from Washington State. As a result of the 2012 detections in Taiwan and Japan, 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. Detections and rejections for Washington blueberries

occurred in 2013 and also included bifenthrin. Two shipments of 10,000 polybags each were rejected due to bifenthrin detection. Each one of these shipments was an approximate \$30,000 loss. This is a very, very serious problem for the U.S. and the Washington blueberry industry. It ranks as one of our most critical issues and add to it the impact of SWD, no issue is more important.

In 2013, trials were set up in Franklin County (eastern Washington), Skagit and Whatcom counties, representing the three main blueberry growing regions in Washington. At each location; malathion, phosmet, esfenvalerate, zeta cypermethrin, spinosad, spinetoram, imidacloprid, thiamethoxam, carbaryl and methomyl were applied to blueberries at the high labeled rate a single time and malathion, zeta cypermethrin, spinosad, imidacloprid and malathion were applied at the high rate twice at 7 days apart. Samples were collected at zero, 1, 5, 9, 14, 17 and 21 days apart. Residue decline curves were generated for each treatment (15) at each of the three locations.

A roughly comparable trial was carried out in the Willamette Valley by OSU's Joe DeFrancesco.

The results and implications to the PNW blueberry industry will be discussed.