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SPOTTED WING DROSOPHILA IN BERRIES – 2013 FINDINGS

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Spotted wing drosophila (SWD) has established itself as the most economically damaging pest to blueberry and caneberry production in the Pacific Northwest. Growers have responded to the challenge of controlling SWD through calendar spray programs and attempted resistance management (IRM). To maximize market flexibility, growers should initially adopt the most restrictive spray program followed by a cautious re-introduction of insecticides to meet changing field conditions and market demands. Access to regionally specific degradation curves, will allow growers the ability to utilize a wider range of insecticides including those with more marginally acceptable tolerance levels, through careful seasonal application timing and PHI adjustment to safely reach target MRL levels.

Despite its predictable late season population build-up, SWD damage in early and mid-season blueberry varieties still remains challenging due to a lack of predictable trends. Concurrent berry crops such as red raspberry, wild Himalayan blackberry and late season caneberries may provide a reservoir for re-infestation throughout the blueberry season. Data gathered over the past few seasons from lab bioassays and field residue tests have provided a list of insecticides effective against SWD <<http://www.mountvernon.wsu.edu/ENTOMOLOGY/pests/SWD.html>>. The most commonly applied insecticides all exhibited good to excellent contact and moderate residual activity to adult SWD on small fruits.

We studied the efficacy of rotational sequence partners, possessing different mode of action chemistries, applied with an over-the-row hydraulic sprayer (red raspberry) and airblast (blueberry) with our foliar bioassay method in 2013.

Red Raspberry Rotation Trial.

Applications were applied with a tractor-mounted Rear's hydraulic plot sprayer equipped to deliver 150 gpa at 4 mph. Treatments were replicated 4 times in a RCBD in 30' by 10' plots. Posttreatment evaluations were made by sampling 5 random, mature primocane leaflets per plot from the spray swath. A leaflet was placed topside up in a disposable 100x15 mm Petri dish with a 5 mm³ of diet media and 5-8 even-aged SWD adults from our lab colony. Adult mortality was evaluated after 24 hr exposure to leaf residues. Because of the brief harvest season for the 8 year-old 'Meeker' on the research center, only 3 rather than the 5 rotational schemes were implemented for 7 or 8-day treatment intervals (Table 1).

Percent mortality of SWD to cumulative exposure for the 3rd spray rotation for the 5 different rotational schemes to 7 DAT, strongly showed residual persistency beyond 7-8 days for the pyrethroids Mustang Maxx and Danitol when rotated with Malathion 8F an Delegate. See <<http://www.mountvernon.wsu.edu/ENTOMOLOGY/pests/SWD.html>>. These data

suggest that the recommended 7 day calendar rotations for the full rates recommended will provide excellent control for SWD while providing favorable red raspberry MRL tolerances for Washington's export markets of Japan, Taiwan, South Korea and China. Based on the bioassay of field residues/daily degradation declines for rotational partners of registered pyrethroids, OPs, spinosads, Danitol and Mustang Maxx provided long economic control beyond the weekly retreatment intervals. This suggests that by the 3rd rotation, these more persistent compounds are providing lethal residues enhancing less efficacious rotational partners such as the spi-

face: harvesting a clean, uninfested crop; staying under target export MRLs and maintaining a protective level of residues on the leaves (where SWD spend the majority of their time) to achieve SWD control. This required that we accurately measure field-aged residues on the berries, leaves and simultaneously perform bioassays using a subset of the leaves. The residue analyses were performed by Dr. Vince Hebert, Director of the WSU/Tricities FEQL laboratory, using GLP standards. This research toxicology laboratory can individually design protocols best suited to the specific insecticide groups increasing recoverable residues and

Table 1. Insecticide spray rotational combinations representing grower options for a shortened 4 week red raspberry harvest, 2013, Mount Vernon, WA

Rotations	Rotation 1	Days	Rotation 2	Days	Rotation 3
Dates	9-July	Between	16* & 17^ July	Between	24-July
#1	Mustang Max	8	Mustang Max^	7	Brigade EC
#2	Brigade EC	7	Malathion 8F*	8	Delegate WG
#3	Danitol 2.4EC	7	Mustang Max*	8	Malathion 8F
#4	Mustang Max	8	Brigade EC^	7	Mustang Max
#5	Brigade EC	7	Mustang Max*	8	Danitol 2.4EC
UTC					

nosads and even malathion. **Cumulative exposure or carryover from multiple residue layers** increases mortality and protection as the season progresses. This increase occurs simultaneously with seasonal population increases of SWD.

Blueberry rotation trial.

Unlike other insecticide degradation studies, we looked at the three challenges berry growers

information. Other degradation studies simply look at berry MRLs without providing growers with the knowledge of how these levels equate to SWD control! While MRLs refer to levels of daily dietary intake, these same levels must also provide effective SWD control to warrant their use. Our study investigates this parallel relationship.

The Rears dilute orchard airblast sprayer used at the Pan-American Berry farm in Salem, OR was equipped with 6 D-3 hollow cone nozzles per side to deliver 50 gpa at 100 psi at 6.5 mph at the Pan-American Berry farm, Salem, OR. Foliage samples from 8 year-old 'Aurora' bushes were collected from high and low positions in designated, alternative rows one day before (-1) and at 0, 1, 3, 5 and 7 days after treatment (DAT) for foliar bioassays. Bioassay arenas consisted of two blueberry leaves placed topside up in 100x15 mm Petri dishes with 5-8 even-aged SWD adults replicated 10 times. Mortality was evaluated after 24 hours. Two rotations of Malathion 8 Aquamul and Mustang Maxx were applied on 7-day rotations beginning on 28 July and a Danitol applied on 1 September. These

data provided a quantitative understanding of how calendar spray rotations with different MOA insecticides, can provide season-long fruit protection by creating a toxic field habitat for the flies. This protective habitat resulted from cumulative, carryover exposure, while protecting ripening berries at or below MRL tolerances for target export markets. <<http://www.mountvernon.wsu.edu/ENTOMOLOGY/pests/SWD.html>>. Results (% mortality) of lab bioassays based on field-aged blueberry foliar residues, always underestimates overall field performance. The lower than expected % mortality of the bioassayed flies doesn't reflect the repeated insecticide exposure that the flies encounter in the field. Fruit samples subjected to the salt-dunk method (e.g., salt-water solu-

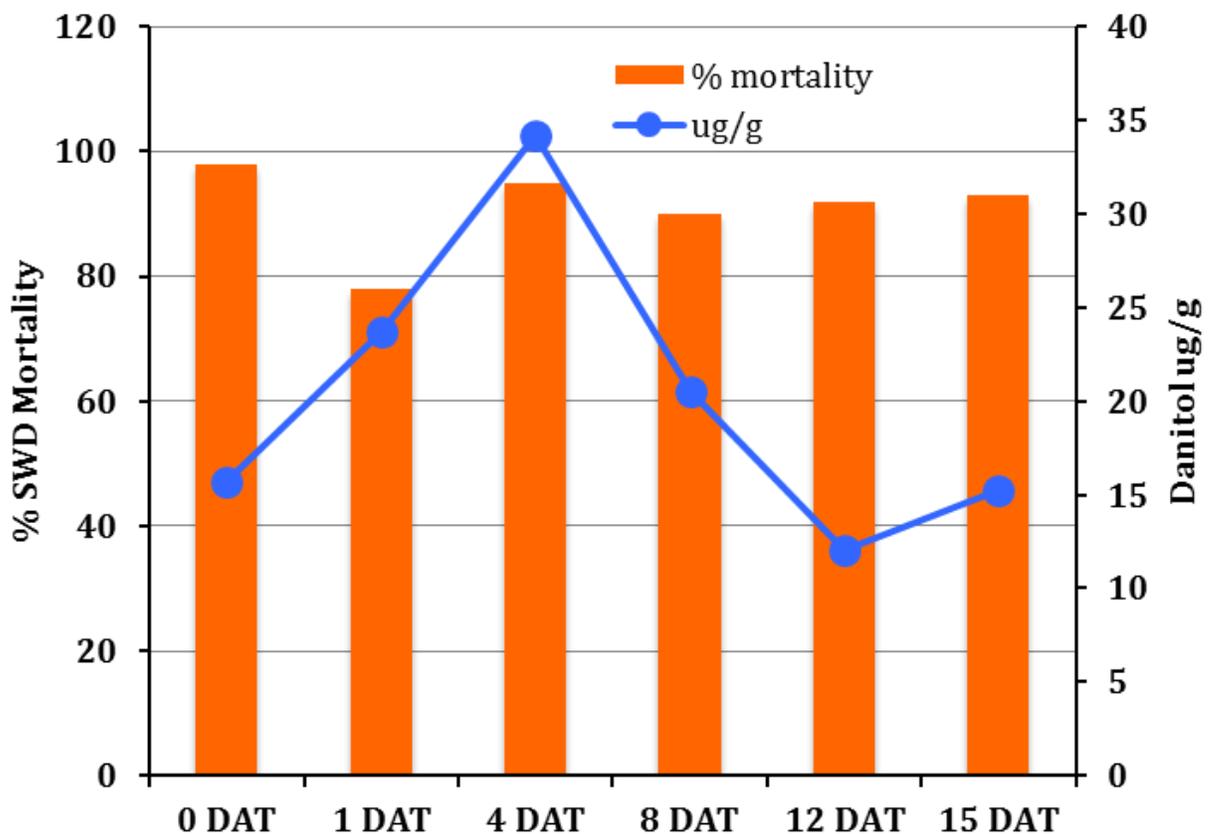


Fig. 1. Danitol leaf residue concentrations and bioassay mortality.

tion of 1 cup salt in 1 gallon of water) to detect SWD infested berries, were negative for the presence of any larvae. Foliage analyses not reported here, indicated residue declines during the 7 day rotations for the 3 insecticides, remained toxic to SWD adults through continued exposure to layers of overlapping dried residues by the 3rd seven-day rotation. Danitol (not registered in Canada) provided over 95% adult mortality at 15 days posttreatment. Leaf residue analyses showed a 7-fold decline from the 4th to 15 day posttreatment with no significant differences between their mortality levels (Fig. 1). Leaf bioassays, coupled with foliar residue degradation curves, indicate recommended treatment intervals are adequate for protecting the fruit. The residue studies highlighted the cumulative effect from weekly applications, providing both lethal and sublethal protection resulting from layer upon layer of chemicals. Furthermore, insecticides with longer persistency such as the pyrethroid Danitol, could be applied as the first *knockout* application of the season as well as the *clean-up* treatment at the end of harvest. Scheduling more persistent chemistries preceding shorter residual materials such as spinosad or OPs could fortify contact residuals of these insecticides. It is conceivable that we will soon have the knowledge to develop rotation schemes that would even delete a rotation because of its long persistency or because SWD populations were below the economic threshold by the 3rd or 4th rotation in a long and late maturing cultivar such as 'Aurora'.

WHEN GREEN DOESN'T MEAN GO

Adapted from Oregon State University Extension Service Publication EC 1642-E, Spring Pasture Essentials, Brian Tuck, Oregon State University Extension Service; Susan Kerr, Washington State University Extension; Shilah Olson, Wasco County Soil and Water Conservation District; and Ellen Hammond, Oregon Department of Agriculture

It may be tempting to turn livestock out as soon as you see the first shoots of green in your pasture, but hold off! How you manage your pasture in the spring can make all the difference in the long-term growth and health of both your pasture and your animals. Here are a few tips to keep your pastures healthy and productive.

Turning animals onto spring pastures

To keep pasture healthy and productive, wait to turn animals out until the soil has firmed up and plants have enough new growth. Animals turned out too early in the spring will compact the soft soil and damage plants (Photo 1). Grass shoots and roots get trampled and cut by



Photo 1. Soil compaction and deformation, removal of desirable plants and weedy invaders resulting from premature livestock impact on wet spring pasture.

hooves; pasture is more prone to weed invasion and soil erosion; and pasture lifespan is significantly reduced if turn out is too early. Also, horses can founder if they graze grass too much or too early in the spring.

When turned out too early, animals will pull grass out by its roots, killing the plants. Always do the “pull test” to decide if it’s safe for turnout: grab a handful of grass and tug. If you can pull it out by the roots, so can animals when they are grazing.

How much plant growth is enough?

Plants should be at least 6 to 8 inches tall at time of turnout. Take livestock off when plants are grazed down to 3 to 4 inches tall. Studies show that 50 percent of root growth is stopped when more than 50 percent of the above-ground portion of a grass plant is removed. As shown in Table 1, plant growth above ground mirrors what is occurring below ground. A small root system can only support a small amount of plant growth. It takes longer for a plant grazed very short to recover following grazing, too. Grass regrowth is based on how much green leaf area is left. Growth also depends on environmental conditions such as air and soil temperature and soil moisture. When plant growth is slow, recovery takes longer.

Table 1. Effects of forage removal on plant root growth.

Percent of grass plant removed	Percent of root growth stopped
10–40	0
50	2–4
60	50
70	78
80–100	100

Rotational grazing

You can improve grass production and help prevent both overgrazing and undergrazing by using rotational grazing. Subdivide pastures into several smaller units (cells). Move your animals through the cells as grass is grazed down to 3 to 4 inches high. You might need a sacrifice area (all-season pen) and some additional hay to hold animals until grass has re-grown and is ready again for grazing at 6 to 8 inches tall. In dryland areas, it may be months before cells can be grazed again. To help control internal parasites, move your animals to the next grazing cell after 4 or 5 days. Do not return to a cell sooner than 42 days—the longer the better to reduce parasite re-infestation.

Safety

Each year before turnout, walk your pastures to make sure they are safe for animals:

- Check fences for breaks and down wires
- Look for toxic plants and weeds
- Scout for dangerous debris that winter floods may have carried onto pastures
- Look for holes that animals could step in

and injure a leg

- Remove old wire, metal, batteries, sources of lead paint, etc.

Landowners are resource managers

Good planning and a little patience before spring turnout will reap long-term rewards of improved health, good growth and long life for your pasture. Making good decisions about spring turnout avoids having weeds replace your useful plants, which would mean buying more hay and increasing other expenses. Manage your grass to keep your pasture green and productive and your animals healthy and safe. A healthy pasture erodes less, too, helping to maintain water quality and preserving your investment.

Excerpt from *Living on The Land — Spring Pasture Essentials* (EC 1642), © Oregon State University Extension Service.

PESTICIDE PURCHASES IN THE AGE OF VIRTUAL STORE FRONTS

Thomas Hoffmann, WSDA Technical Assistance Specialist

Virtual companies that sell by means of the Internet and the World Wide Web are changing traditionally accepted economic practices. Although traditional economic truths may no longer be applicable in the virtual world of "e-tailing" or "virtual storefronts", principles involving customer diligence and prudence remain unchanged.

While touting greater price transparency, convenient shopping, enhanced consumer access to information, and the removal of restrictions of geography and time, the benefits of e-tailing demand consumer awareness of relevant federal and state regulations involving pesticide sales. Buyers must also be attentive to the inherent risks presented by the virtual marketplace concerning unregistered or discontinued pesticides and the perils that these materials may pose to human health, food and feed safety, and environmental quality.

Vigilance with the Internet sales of pesticides is inter-

national in scope. Europol, the European Union's law enforcement agency, has observed a steady global increase over the past 10 years in the number of infringements involving agro-chemical products. These violations range from simple trademark infringements to look alike products, patent infringements, and counterfeit and illegal compounds complete with product

"No person may distribute or sell any pesticide product that is not registered under the Act. . . ."

Title 40 CFR Section 152.15

registrations. With some markets within the European Union, Europol estimates that as much as 25 percent of the pesticides sold originate from the black market and are either substandard or counterfeit versions. According to the European Crop Association, illegal pesticides could make up as much as 50 percent of the total market in some regions.

Anonymous parties involved in Internet sales can increase the inherent risk in the handling of pesticides. (Handling includes listing, sale, purchase, shipping, transport, delivery, receiving, preparation, and use.) Pesticide sales over the Internet are enforced by several federal agencies that include the U.S. Environmental Protection Agency, U.S. Department of Transportation, U.S. Postal Service, and U.S. Department of Homeland Security. Coordination of multi-agency efforts with diligent enforcement of long-established laws and regulations should effectively deter rogue Internet sales of pesticides in this country. Nevertheless, regulations and agency enforcement should not be a substitute for consumer diligence and discretion.

The first pesticide legislation was signed into law by President William H. Taft on April 26, 1910, as the Federal Insecticide Act of 1910. The law primarily focused on protecting consumers from ineffective products and decep-

From the originating Act of 1910, federal pesticide legislation has progressed from consumer protection to an emphasis on protecting human health and safeguarding the environment.

tive labeling. While setting standards for chemical quality and for providing consumer protection, the Federal Insecticide Act of 1910 did not address the growing concern of potential environmental contamination and health risks arising from the increased usage of pesticides following WWII. With the passage of the 1947 amendments, the Federal Insecticide Fungicide Rodenticide Act, or FIFRA, superseded the Federal Insecticide Act of 1910. FIFRA established

The Federal Insecticide, Fungicide, and Rodenticide Act is legislation that provides the basis for the regulation, sale, distribution, and use of pesticides in the United States.

procedures for registering pesticides with the U.S. Department of Agriculture and established labeling provisions. However, the law still emphasized pesticide efficacy and did not regulate pesticide use.

In 1972, FIFRA underwent a major revision when amended by the Federal Environmental Pesticide Control Act (FEPCA). The FEPCA transferred responsibility of pesticide regulation from the U.S. Department of Agriculture to the U.S. Environmental Protection Agency (EPA) and shifted emphasis to protection of public health and the environment. With the FEPCA amendments, EPA was specifically authorized to strengthen the registration process by shifting the burden of proof to the chemical manufacturer, to enforce compliance against banned and unregistered products, and to bring about the regulatory framework missing from the original law. In 1988, FIFRA was amended to change pesticide registration laws and to require re-registration of many pesticides that had been registered before 1984. FIFRA has been amended numerous times since 1972, including significant amendments that comprise

the Food Quality Protection Act (FQPA) of 1996 and the Pesticide Registration Improvement Extension Act of 2012. In its current form,

FIFRA authorizes EPA to establish registration regu-

EPA regulates pesticide use under the authority of two federal statutes: Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug, and Cosmetic Act (FFDCA).

lations for all pesticides (with minor exemptions); to regulate the sale, distribution, and use of pesticides; and to suspend or cancel the registration of a pesticide if subsequent information substantiates that continued use would pose unreasonable risks.

FIFRA mandates that all pesticides offered for sale, distributed, or used in the United States must be registered by EPA. Registration assures that pesticides will be properly labeled and, if used in accordance with use directions contained on the label or labeling, that the product will not cause unreasonable adverse effects to human health or on the environment. A second federal statute that regulates pesticide use, the Federal Food, Drug, and Cosmetic Act (FFDCA) authorizes EPA to establish maximum residue levels (MRLs, or tolerances) for pesticides used in or on foods or animal feed.

FIFRA stipulates that no individual may sell, use, or distribute a pesticide not registered by the EPA (with limited exceptions). Thus, con-

An USEPA-registered establishment includes companies that produce pesticides or active ingredients, including companies that import into the U.S. The company must register with and file initial and annual production reports with USEPA. Production means formulation packaging, re-packaging, labeling, and relabeling.

cern about the accessibility and convenience of “virtual store fronts” is not so much with growers purchasing pesticides on-line as it is with the selling and distributing of illegal pesticides. An illegal pesticide can be distinguished by any of the following conditions.

EPA and states regulate pesticide use, sale, and distribution by requiring pesticide registration or applicator licensing, or both.

- Pesticide is not registered with EPA and WSDA prior to sale and

distribution.

- Registration is suspended or revoked by EPA or by WSDA.
- Registration is voluntarily canceled by the registrant.
- Pesticide does not have proper labeling.
- Pesticide is adulterated or misbranded.
- Product was not produced in an EPA-registered establishment.

FIFRA does not entirely preempt state, tribal, or local governance (county or city) from regulating pesticide use. In fact, FIFRA authorizes states to establish pesticide registration procedures by means of state pesticide laws. In Washington State, the legislature adopted pesticide regulations with the passage of RCW 15.58: Washington Pesticide Control Act and of RCW 17.21: Washington Pesticide Application Act. In these statutes, WSDA is designated as the state lead agency to administer and enforce pesticide legislation. While enforcement of federal pesticide regulations and label requirements is mainly accomplished by the state lead agency, EPA authority always supersedes state authority. Thus, a state’s primary authority can be rescinded by EPA if safe enforcement of pes-

ticide use is not assured.

FIFRA requires pesticide users to apply pesti-

Pesticides must be registered both by EPA, with limited exemptions, and by WSDA before distribution, sale, and use.

cides in a manner that is consistent with both federal regulations and state laws and rules. During the registration process, a state may impose more restrictive requirements on pesticide use than that required by EPA. Thus, when registering a pesticide, WSDA may require additional use restrictions, record keeping requirements, or applicator training. Compelled by a product’s characteristics, use practices, or human or environmental circumstances, WSDA may

designate a product as a state restricted use pesticide. (These products are listed in WAC 16-228-

To protect consumers from fraud to prevent distribution of mislabeled, discontinued, or otherwise illegal pesticides, WSDA conducts market place inspections of wholesale and retail outlets and of Internet (e-commerce) sites.

1231.) This designation may require pesticide license certification or additional use restrictions.

RCW 15.58.05 requires that any pesticide, including adjuvants, sold or distributed in Washington State must be registered with WSDA. It reads:

Every pesticide which is distributed within this state or delivered for transportation or transported in intrastate commerce or between points within this state through any point outside this state shall be registered with the director and subject to the provisions of this chapter.

FIFRA does not distinguish between the sale and use of pesticide for agriculture or any other use when sales occur through e-commerce instead of traditional channels of trade. The Internet sale of a pesticide product that is mislabeled, not registered, or no longer registered is subject to civil or criminal penalties. EPA can issue civil penalties of up to \$7,500 for each sale.

Generally, it is the seller's responsibility to ensure that a pesticide sold over the Internet is labeled according to federal standards and is registered by EPA and by the state in which the product is to be distributed before offering it for sale. With Internet sales, the seller must also be familiar with federal and state laws concerning shipment, proper transportation, and delivery of the pesticide. Even so, *the buyer may not be held harmless for the illegal purchase or use of a pesticide.*

To purchase, distribute, or use federal restricted-use pesticides (RUPs) or state restricted-use pesticides, the parties must be appropriately licensed. To offer a product for sale in Washington State, the seller must be licensed with

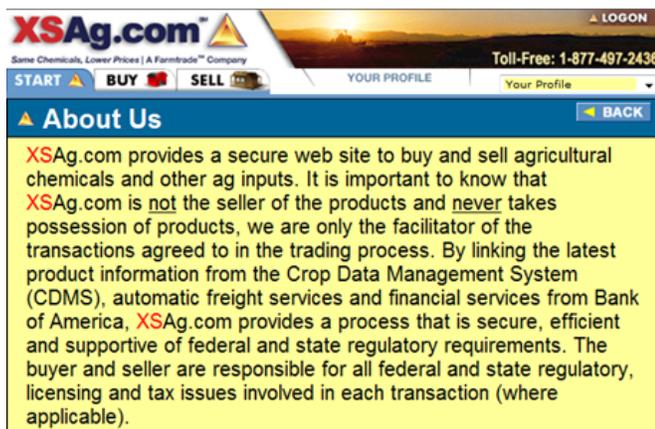


Figure 1. Merchandizing disclaimer alerting buyers and sellers to federal and state regulatory requirements.

the WSDA as a Dealer. WSDA also requires that transaction records be kept of sales and that the records must be made available for review when requested by authorized personnel. In its enforcement capacity, WSDA can issue pesticide license suspensions or revocations, including civil penalties.

Furthermore, the illegal use of a registered

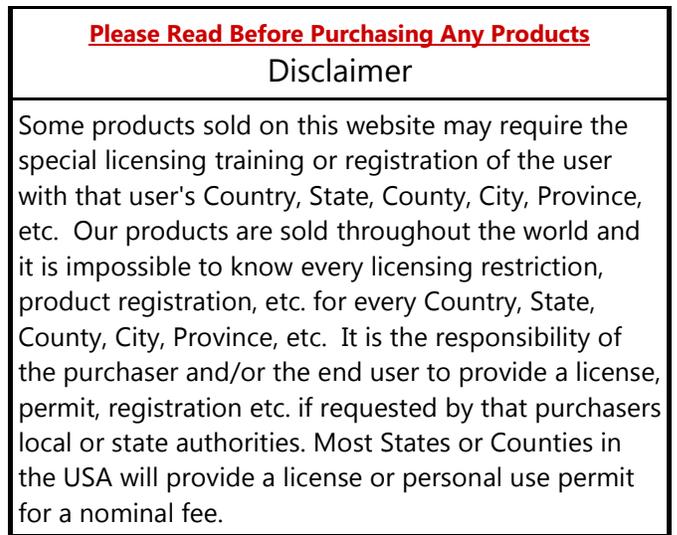


Figure 2. An inclusive website disclaimer that cautions customers about pesticide regulation requirements.

pesticide or the application of an unregistered pesticide can result in the embargo, seizure, or destruction of the crop if the tolerance is exceeded or if no tolerance has been established. Pesticide screening conducted by independent (third-party) auditors to assure compliance with certification programs (e.g., USDA GAP, Harmonized GAP, GlobalG.A.P) may result in rejection by the packinghouse, processor, or the importing county. Certification audit programs typically stipulate mandatory

pesticide application record submissions and periodic residue testing.

Several types of Internet sites exist with the intended purpose to advertise, distribute, or sell pesticides. Most websites provide company background information, advertising or merchandising services, or supply pesticide reference materials (labels or MSDSs). A few Internet sites function as virtual store fronts that offer pesticides for sale. These are generally categorized as:

- auction sites that function as “electronic brokers” and
- domestic or international merchandizing sites where pesticides are bought and sold.

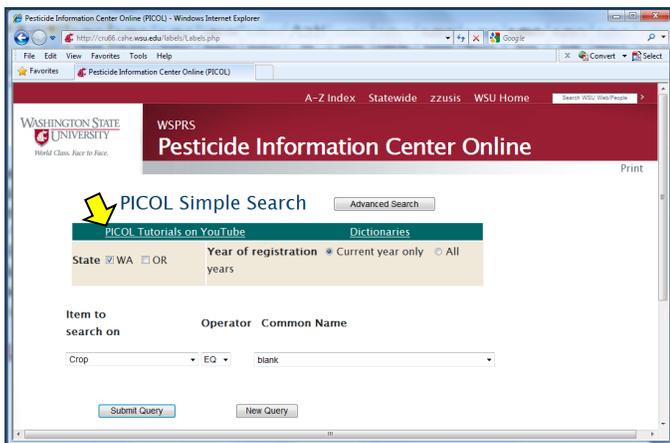


Figure 3. Tutorials (yellow arrow) are available on YouTube to instruct users in conducting pesticide label searches.

Acting in the capacity of brokers, electronic brokerage sites bring the buyer and seller together to merchandize pesticides. Auction sites typically post a disclaimer to their website (Figure 1), alerting customers that pesticide sales or purchases may be subject to pesticide regulations. The disclaimer on some websites is more forceful in forewarn-



Active Ingredient:	By Wt.
Bifenthrin: (2-methyl[1,1'-biphenyl]-3-yl)methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethyl-cyclopropanecarboxylate*	25.1%
Other Ingredients:**	74.9%
	100.0%

This product contains 2 pounds active ingredient per gallon.
 **Cis isomers 97% minimum, trans isomers 3% maximum.
 **Contains xylene range aromatic solvents.

EPA Reg. No. 279-3313 EPA Est. 279-NY-1

Figure 4. Portion of Brigade® 2EC label containing the list of ingredients and EPA Registration Number.

ing customers about their responsibility with regard to pesticide licensing and product registration (Figure 2). Although not all auction websites may post a disclaimer, users of the on-line service are nonetheless bound by relevant federal statutes and state laws and rules concerning pesticide sales and purchases.

Some domestic- or foreign-based websites advertise pesticides and market directly to a buyer. Pesticides being marketed on foreign websites may or may not be registered in the U.S. (This may also be the case with pesticides offered for sale on domestic websites.) Even if

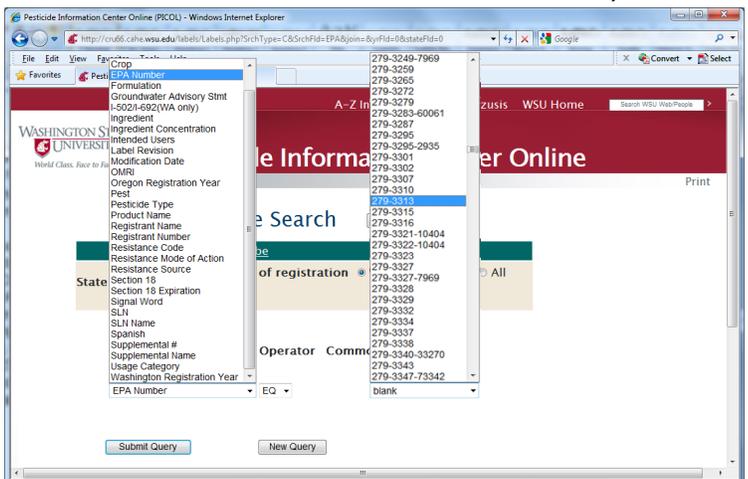


Figure 5. Search routine in PICOL to determine registration status of Bri-

registered, a pesticide may not necessarily be compliant with FIFRA regulations (i.e., adulterated, mislabeled, or misbranded) or with relevant state laws (i.e., unregistered).

The registration status of a pesticide in Washington State can be verified by using on-line registration databases maintained by Washing-

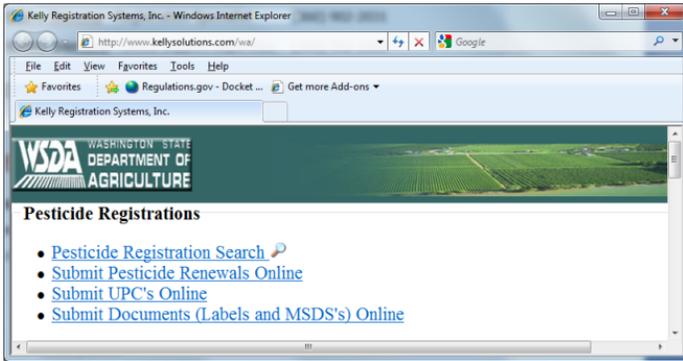


Figure 6. WSDA pesticide registration homepage from which label search routines can be conducted.

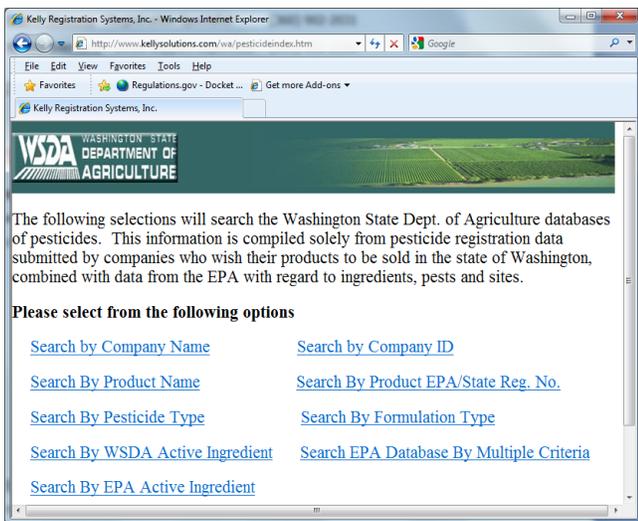


Figure 7. Search routines that are available from the WSDA pesticide registration database.

ton State University (WSU) Pesticide Information Center Online, or PICOL, and by WSDA. The Internet address to WSU's PICOL website is <http://cru66.cahe.wsu.edu/LabelTolerance.html>. The PICOL label database contains pesticide products registered either in Oregon or in Washington State. Washington State registra-

tions include Section 3, Section 24c (Special Local Needs), Section 18 (Emergency Use from Exemption), and federal supplemental labels.

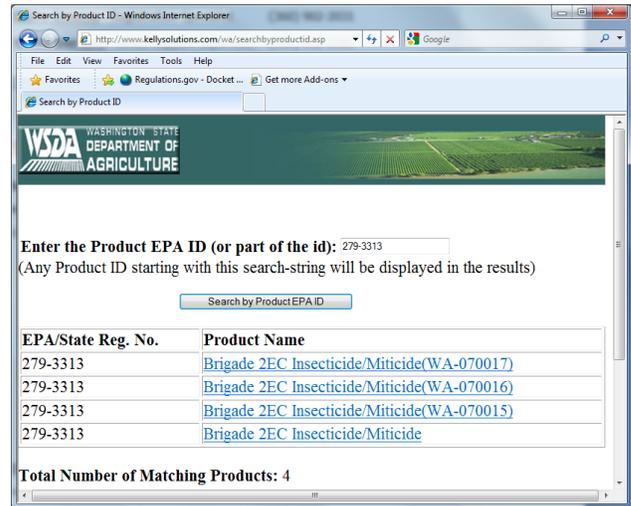


Figure 8. Results of a WSDA pesticide registration search for EPA Reg. No. 279-3313.

Oregon registrations include Section 3, Section 24c, and federal supplemental labels.

To assist a user in conducting label searches, PICOL tutorials are available on YouTube. A link to the PICOL tutorials appears on the WSU PICOL homepage (Figure 3).

While the PICOL database provides several options to verify the registration status of a pesticide in Washington State (or Oregon), the quickest method is to use the product's EPA Registration Number. The number is printed on the pesticide label, usually immediately under the Active and Other Ingredients block. For example, in Figure 4, the EPA Registration Number (presented as EPA Reg. No.) for Brigade[®] 2EC Insecticide/Miticide is 279-3313. Once identified, the number can be referenced in the PICOL database. The search routine is illustrated in Figure 5.

Click on the arrow to activate the dropdown box and select "EPA Number." Leave the "Operator" as "EQ," which means equal. Then, click on the arrow for the next dropdown box. A listing of EPA registration numbers will appear for WSDA-registered products entered into the PICOL database. Select the desired EPA Registration Number to populate the box, and then select "Submit Query." If registered, the "Search Results" will display the number of labels that match the EPA registration number. Multiple labels are possible since Special Local Need (24 [c]), Section 18 (Emergency Exemption from Registration), and federal supplemental labels may exist in addition to the Section 3 (federal) pesticide label. Pesticide labels can be downloaded from the PICOL website.

Another option is the WSDA Pesticide Registration webpage (Figure 6). The Internet link is <http://www.kellysolutions.com/wa/>. As with PICOL, several search routines are available (Figure 7).

In conducting a product search for EPA Reg. No. 279-3313, the WSDA registration database identifies four products (Figure 8). Unlike PICOL, the product names are hyperlinked to EPA-stamped labels, which were submitted by the product registrant to EPA. The label submitted to EPA may not be the same product label that was submitted to WSDA Pesticide Registration. However, there are some state-registered labels that can be downloaded from the webpage.

If you have questions about pesticide licensing, registration, or use, please contact staff

WSDA Pesticide Management Division		
Registration Services	Certification & Training	Compliance Services
Registration status of a pesticide or a product's registered use. Phone: (360) 902-2030 Toll-Free: 877-301-4555 Email: pestreg@agr.wa.gov	Pesticide license certification requirements for dealers, buyers, and users of pesticides. Toll-Free: 877-301-4555 Email: license@agr.wa.gov	Federal and state regulations relating to storage, distribution, transportation, disposal, and use of pesticides. Phone: (360) 902-2040 Toll-Free: 877-301-4555 Email: pcompliance@agr.wa.gov

Snapshot of Washington State Pesticide Laws and Rule
<p>RCW 15.58: Washington Pesticide Control Act Pesticide registration, stop sale or use, removal, and recordkeeping of sales.</p> <p>RCW 17.21: Washington Pesticide Application Act Applicator licensing and certification, and application recordkeeping.</p> <p>WAC 16-228: General Pesticide Rules WSDA guidelines in the enforcement of pesticide laws.</p>

with the relevant WSDA Pesticide Management units as listed below (next page).

When using Internet to price or purchase a pesticide, the following guidelines will assist you in determining whether the product is legal to purchase and use in Washington State and of your responsibilities under Washington State pesticide laws and rules.

- Use caution when buying on the Internet. A professional looking website doesn't assure seller knowledge of federal regulations or state laws or rules.
- With few exceptions, the product label must list an EPA registration number and an EPA establishment number.
- Make certain the product is registered with WSDA, as all pesticide products must be.
- The product must come with an EPA-approved pesticide label. All label language must be approved by EPA before a pesticide can be lawfully sold or distributed in the U.S. Pesticide labels provide critical information on how to safely and legally handle and use the product.
- Do not purchase a federal RUP or state restricted use pesticide unless the seller and buyer are properly licensed or certified within the state(s) where the seller and buyer reside.
- WSDA requires the seller, although not physically located in this state but conducting business here, to be licensed as a Dealer.
- WSDA requires that transaction records of pesticide sales of agricultural pesticides must be kept for seven years and be made available upon request.

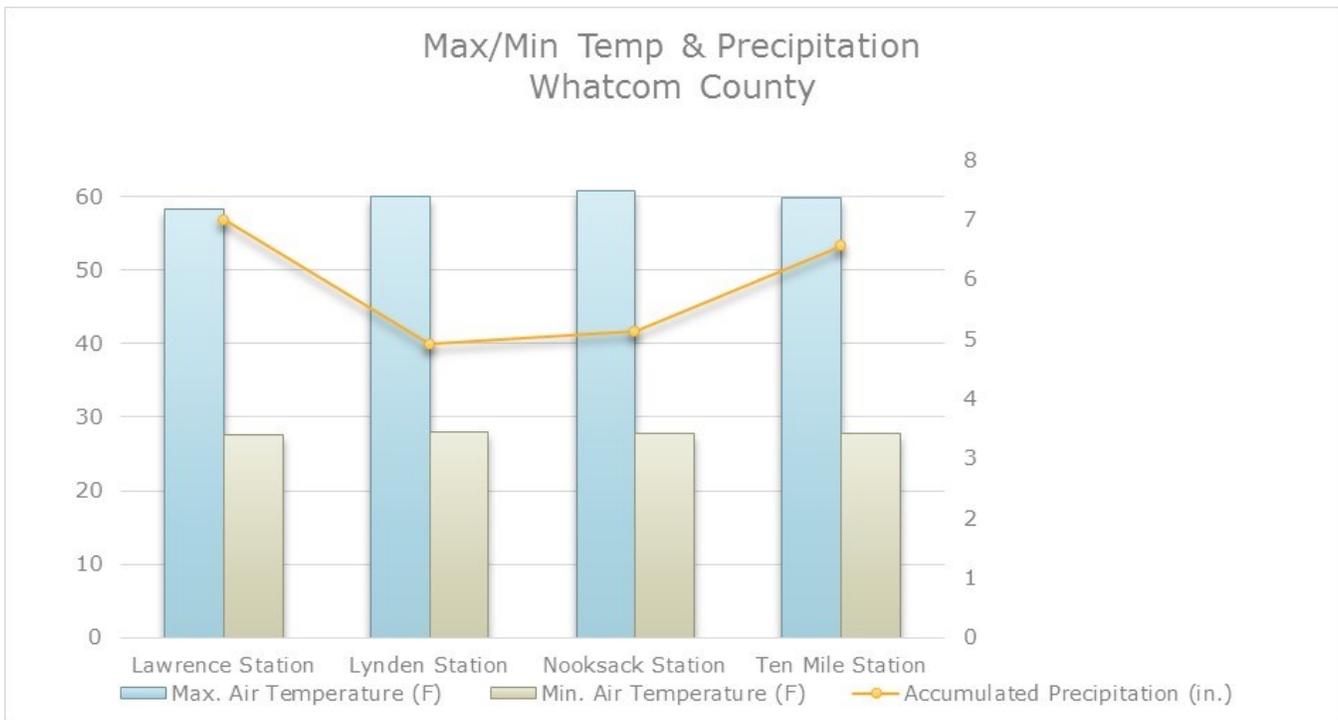
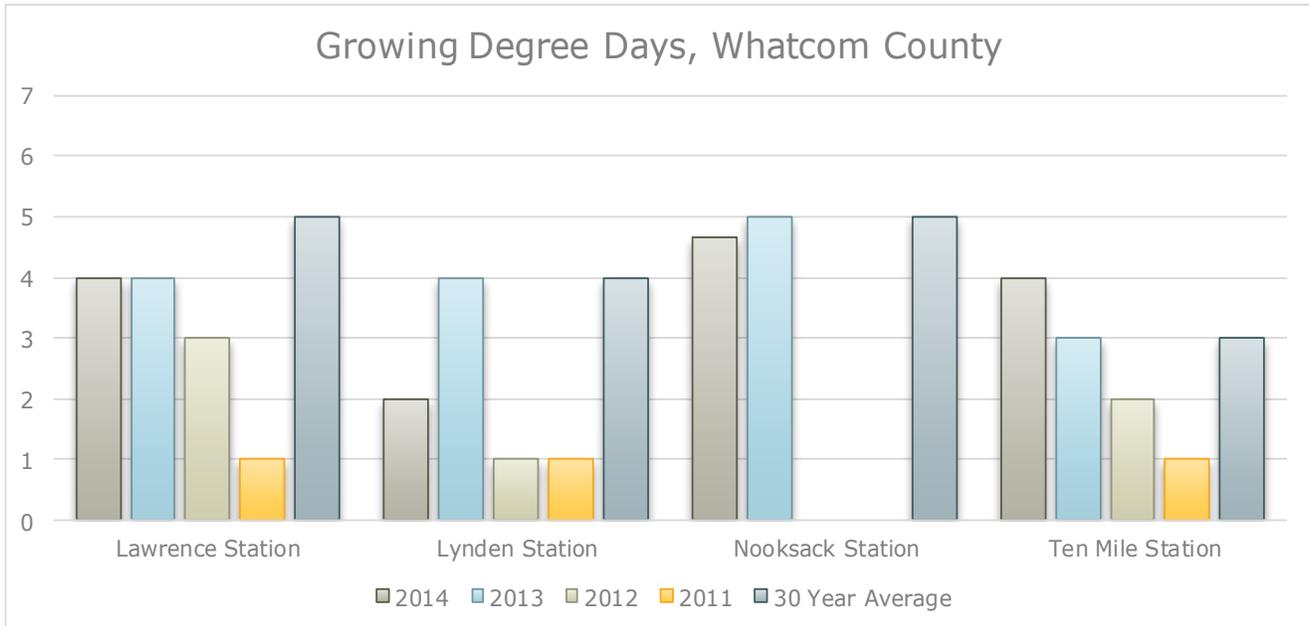
In summary, FIFRA provides EPA with the

authority to regulate Internet sales of pesticides. All pesticides, whether imported into or originating within the U.S., must comply with the federal pesticide statutes and state laws and rules. Pesticide labels are legally enforceable, and all of them display the statement: *"It is a violation of federal law to use this product in a manner inconsistent with its labeling."*

Consequently, under FIFRA, no individual may sell, use, or distribute a pesticide not registered with EPA (with few exceptions) and by the state in which it is sold or used.

WEATHER UPDATE

All information here is derived from the four weather WSU AgWeatherNet stations (<http://weather.wsu.edu/awn.php>) in Whatcom County. Current weather conditions can be found at: <http://whatcom.wsu.edu/ag/currentdata.html>. Station information can be found [here](#).



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Cover Image:

Recent snow in
raspberry field.

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Upcoming Events

March

Hard Cider Making

March 19th

6:00 pm - 9:00 pm

WSU Snohomish County

Learn what goes into a bottle of quality hard cider, a rapidly growing small farm and orchard product niche.

Pasture Poultry Production

March 24th

9:00 am - 1:30 pm

**WSU Whatcom County Extension
Bellingham, WA**

This workshop is for both current producers considering scaling up their production and those investigating entrance into this promising sector of the poultry industry. Workshop presenters will discuss how to safely, profitably, and legally raise meat birds. Learn about the pros and cons associated with raising meat birds and how to effectively evaluate the enterprise before getting started. Topics include breeds, chick sourcing and creating an on-farm hatchery, husbandry tips for commercial pastured poultry production, building a healthy pasture forage system, poultry nutrition overview, risk management, and requirements for on-farm WSDA processing.

Meet-and-Greet with New WSU Berry Crop Specialist

March 31st

10:00 am - 1:00 pm

WRRRC Office

This open house gives an opportunity to meet the newly hired berry crop specialist, Lisa Wasko DeVetter. Stop by and say hi.

April

Beef 100, Lamb/Goat 100, Poultry 100

April 4th

WSU Snohomish County

All Livestock 100 short courses are designed to increase the knowledge and skills of those expanding into livestock production, and they are also excellent refreshers for experienced producers looking to increase the sustainability of current operations. Each course helps farmers and ranchers increase their knowledge on the safe production of high quality food animals in an environmentally sound and humane manner. Topics address opportunities and issues that enhance the production, safety, and quality of beef, lamb, pork, and poultry from farm to table.

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Upcoming Events

[Farm Recordkeeping for
Productivity &
Profitability](#)

April 5th

9:00am - 3:00 pm

WSU Snohomish County

Accurate and up-to-date financial records are essential to any growing business, but are especially important to farms and agricultural businesses. Without a good record-keeping system in place, decisions will be made based on hunches, not reality.

[Pork 100, Poultry 100](#)

April 5th

WSU Snohomish County

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[Grafting Fruit Trees](#)

Lecture - April 9th 6:00 - 8:00 pm

Hands-On - April 12th 11:00 am-3:00 pm

Learn about different types of grafting, how to choose and take scion wood, choosing a receptor site, how to make the graft and seal it properly. Then we'll head outside to practice renovating several mature trees in the orchard through a grafting process known as top working.