Utah Berry Growers Association Newsletter

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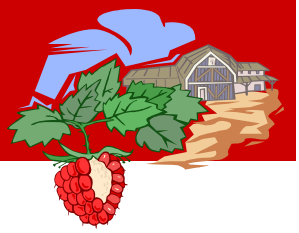

Save the Date
Winter Meeting of the Utah Berry Growers Association

January 20, 2011, 1:00 p.m.
Bridgerland Applied Technology Center at Brigham City, UT

Inside This Issue

NRCS High Tunnel Initiative Goes Statewide
Sign up before October 1st

Many of you may have heard that the Natural Resource Conservation Service (NRCS) started a cost-share program for high tunnels in early 2010. For the 2010 growing season, this program was limited to a handful of counties. For the 2011 growing season, State Conservationist Sylvia Gillen decided high tunnel cost share will be offered statewide.

The sign up period will end on October 1st. If you are interested, contact your local NRCS office as soon as possible, to find out more information. This link will direct you to the appropriate person to contact in your local area. http://www.ut.nrcs.usda.gov/contact/

Spotted Wing Drosophilia Detected in Utah Caneberries

Cory Vorel, Cooperative Agricultural Pest Survey Coordinator, and **Diane Alston**, Entomologist
Utah State University

Fig. 1

An invasive vinegar fly called spotted wing drosophila (*Drosophila suzukii*) (SWD, Fig. 1) was caught in traps in a raspberry and blackberry field in Davis County in August and September, 2010. During this past summer, SWD was surveyed in 10 northern Utah fruit sites as part of the Utah Cooperative Agricultural Pest Survey (CAPS) Program. Introduced from Asia to California in late 2008, SWD has since spread throughout California, Oregon, and Washington. Due to a separate introduction in 2009, SWD has also spread from Florida to Louisiana, North Carolina, *and South Carolina.*

Unlike the common vinegar fly that infests produce left on the kitchen counter for too long, SWD can infest un-ripe, ripe, and over-ripe fruits because the female has a serrated ovipositor to cut into fruits for egg-laying (Fig. 2). SWD will attack tree fruits, small fruits, and vegetable fruits such as tomatoes, peppers, and melons.

Fig. 2

To date in Utah, a total of 12 SWD were trapped in the Davis Co. caneberry field. Although other fruits are grown at the site, SWD has not been detected in those fruits or at any other survey sites. It is not known how SWD was introduced, but it is likely that it was brought in with fruit imported from a state where SWD already occurs. It is also not known if SWD can survive the winter in northern Utah; it is likely that it can survive a southern Utah winter. Monitoring by the CAPS program will expand in 2011 to include 50 survey sites statewide.

A USU Extension fact sheet is available that provides information on monitoring, identification, and control (http://extension.usu.edu/files/publications/publication/ENT-140-10.pdf). In sites with susceptible fruit hosts, monitoring for SWD is recommended, with chemical control only becoming necessary when SWD is actually found. Trapping and control recommendations apply to commercial farms and home gardens. As described in the fact sheet, inexpensive traps can be made using plastic cups and a liquid bait of yeast and sugar solution. Male SWD are easy to identify because they have a single dark spot on each wing (Fig. 1). Females do not have the wing spot. It is important to be aware that other, similar flies have spots on their wings, but only those with a single spot per wing are suspect. If you believe you have found SWD, please submit specimens to the Utah Plant Pests Diagnostic Lab for identification (434-797-2435) and tracking of its distribution in the state. Caneberry fields are not routinely sprayed with insecticides, and this is a probable reason for its appearance in this crop as Utah's first documented infestation. If SWD is detected in a site, initiate an insecticide program when fruits first turn yellow in color (avoid spraying when pollinators are active). Many insecticides are effective, including spinosads (Delegate, Success and Entrust^{O}), neonicotinoids (Assail), carbamates (Sevin), pyrethroids (Asana, Baythroid, Pounce, Pyganic^{O}, Proaxis, and Warrior), and organophosphates (Diazinon and Malathion) (^{O} indicates organic certified products). The fact sheet contains information on insecticide modes of action to help guide product rotation and prevention of insecticide resistance. When choosing a product, remember that pyrethroids, malathion, and carbaryl can flare spider mites. You must follow product re-entry intervals (REIs), pre-harvest intervals (PHIs), and maximum residue limits (MRLs) (if fruit will be shipped out of state).

SUMMER FARM TOUR OF THE USU KAYSVILLE RESEARCH FARM

Brent Black, Extension Fruit Specialist

The 2010 Utah Berry Growers Association summer field day was held at the Kaysville Research Farm on August 17th. Co-sponsors for this year's meeting included UBGA, the Utah State Horticulture Association (USHA), the Utah Vegetable Growers, and USU Extension. Participants could attend up to three 90-minute sessions and choose from one of five concurrent tracks for each session. Tracks were grouped by commodity and included: Cane Berries, Tree Fruit Orchard Management, Stone Fruit Groundcover Management, and Vegetable Crops. The remaining track was for those interested in pesticide applicator recertification credits and covered Pesticide Laws and Safety.

Extension Fruit Specialist Brent Black demonstrates the movable blackberry trellis to tour participants.
Photo courtesy of Mike Pace, USU Extension

The cane berry tour featured presentations by USU Extension Specialists Brent Black, Ralph Whitesides and Diane Alston. Dr. Black gave a status update on the three variety trials at the Kaysville farm, which include 17 summer-bearing raspberry varieties, 10 fall-bearing raspberry varieties, and 21 varieties of blackberry. Winter injury was more severe in 2010 than in 2009, which is providing some more realistic indications of which summer-bearing brambles are going to be best suited for northern Utah. Black also talked about his work with using movable trellises for blackberries. The benefits of these rotating arm trellises for winter protection of floricanes has been marginal in northern Utah. The floating row covers have not offered the degree of winter protection seen in other areas of the U.S., likely due to more extreme midwinter temperature fluctuations in our high-elevation desert climate. More detailed results will be coming in a later issue of the newsletter.

Extension Weed Specialist Dr. Ralph Whitesides talked about the challenges of weed control in perennial crops such as berries. In the July issue of the UBGA newsletter (available online at extension.usu.edu/publications), Dr. Whitesides published a list of herbicides labeled for use in canefruit crops. At the field day, he emphasized the importance of reading and following the product label. Since many of the herbicides labeled for use on cane fruits are "pre-emergent" herbicides, he pointed out that these materials are not effective against established perennial weeds, and when properly applied, act as a barrier to weed seed germination. He also emphasized that cultivation and wheel or foot traffic that disturb the soil surface disrupts this barrier, allowing weed seed germination. Dr. Whitesides also cautioned that non-selective herbicides, such as those that contain glyphosate, are as effective at killing raspberries as they are at killing perennial weeds and should be used with extreme caution to avoid contact with desirable vegetation.

USU IPM Project Leader Marion Murray discusses insect monitoring during the Orchard Management track.
Photo courtesy of Mike Pace, USU Extension

Extension Entomologist Dr. Diane Alston talked about research on raspberry horntail, the cane-boring insect that over the past few years has been a significant pest in northern Utah. After two seasons of intensive sampling, she and her research team are learning more about the lifecycle of this insect in the hopes of developing better control strategies. Much of what she has learned is in the following article, and in a USU Extension factsheet available on the Utahpests website (http://utahpests.usu.edu).

Fig. 1

Raspberry Horntail Research Update

Diane Alston, Entomologist

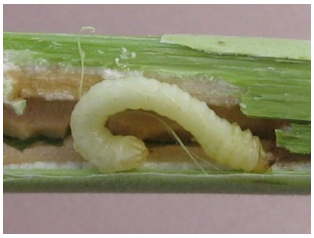

Fig. 2

Raspberry horntail, *Hartigia cressonii*, is a caneboring wasp (Figs. 1 and 2) and one of the most damaging pests of raspberries in Utah. The horntail exclusively attacks first-year growth, or primocanes. The upward tunneling of young larvae in the cambium and heavy feeding of larvae near the tips of canes can cause the cane tip to soften, wilt, and die back (Fig. 3). The downward tunneling of older larvae in the center pith can cause structural damage to the canes. Damaged canes have reduced fruit yields.

Fig. 3

Research at the Utah State University farm in Kaysville in 2009 and 2010, in summer- and fall-bearing raspberries, showed that cane wilting and horntail larvae were first detected in late June to early July (Fig. 4). Young larvae tunneling upward in canes were present earlier, but cane infestation wasn't evident until this time. Horntail densities peaked in early July in both years, and then declined to low levels by mid August. Several species of parasitic wasps attacked horntail larvae within canes, and provided biological control (Figs. 5 and 6). During 2009 and 2010, parasitism rates peaked at 33-100% in late July in both years, and were slightly higher in 2009 than 2010. Parasitism of horntail larvae infesting summer-bearing raspberry canes was higher than for fall-bearing raspberries in both years. There was a wide range in susceptibility of raspberry varieties to horntail, and variability among the two years (Table 2). For 17 summer-bearing varieties evaluated, Royalty, Cascade Dawn, Cascade Delight, and Moutere were the least susceptible in the two years of study, while Canby, Willamette, Reveille, and Saanich were the most susceptible. For 10 fall-bearing varieties, Polana, Caroline and Summit had the fewest horntail and Jaclyn, Himbo Top, and Anne had the most, especially in 2010.

Fig. 4. Raspberry horntail abundance in summer- and fall-bearing raspberries in 2009 and 2010, Kaysville, UT.

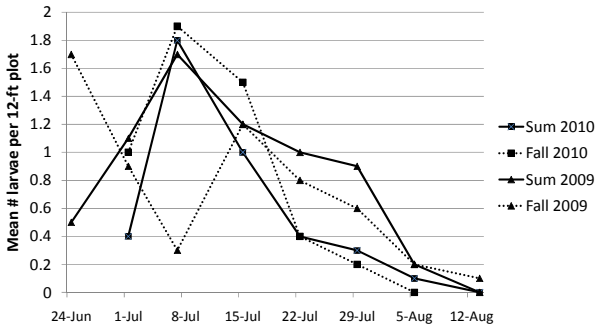

Fig. 5

Fig. 6

The primary control tactic for horntail has been to prune cane tips when tip-wilting is evident. With this control tactic, there is loss of fruit-producing buds. For fall- or ever-bearing varieties, pruning canes at ground level in the spring will remove larvae that have overwintered in the previous year's canes, and help lower populations. Targeting adults in the late spring with an insecticide may reduce egg-laying and cane infestation. An insecticide study was conducted in 2010, but unfortunately, horntail densities were low in the study plots and no differences were found between the untreated control and treatments. In 2010, several commercial raspberry fields were treated with insecticides in early June when adult horntail wasps were first observed, and resulting horntail control levels were moderate to good. Research is ongoing to better define the adult emergence period and improve predictive timing for control.

Table 1. Parasitism rates of raspberry horntail larvae in 2009 and 2010, Kaysville, UT.

Date	% parasitism of larvae			
	Summer varieties		Fall varieties	
	2009	2010	2009	2010
June 24	0	-	9.1	-
July 1	-	0	-	25.6
July 8	35.1	25.8	41.7	20.0
July 15	32.1	21.7	25.5	44.1
July 22	-	73.1	-	47.1
July 29	98.4	59.1	100	33.3
August 5	61.5	80.0	25.0	0
August 13	70.0	-	40.0	-

Table 2. Susceptibility of 17 summer- and 10 fall-bearing raspberry varieties to raspberry horntail in 2009 and 2010, Kaysville, UT.

Summer variety	Mean no. larvae 2009	Mean no. larvae 2010	Fall variety	Mean no. larvae 2009	Mean no. larvae 2010
Royalty	2.8	0.3	Polana	3.0	1.8
Cascade Dawn	1.5	2.0	Caroline	4.8	2.0
Cascade Delight	1.8	2.8	Summit	5.5	3.3
Moutere	3.0	2.0	Heritage	8.3	1.5
Coho	4.8	1.8	Ruby	5.3	4.5
Cowichan	4.3	2.3	Joan J	3.3	7.3
WDNV2	6.3	1.0	Polka	7.5	3.3
Georgia	4.3	4.8	Jaclyn	4.3	6.8
Chemainus	5.5	3.8	Himbo Top	3.0	8.3
Tulameen	5.8	3.8	Anne	5.5	11.3
Titan	5.3	5.3			
Cascade Bounty	6.0	6.8			
Lauren	10.8	2.0			
Canby	8.5	5.8			
Willamette	12.0	4.3			
Reveille	10.3	6.5			
Saanich	7.0	12.3			

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We hope you find the information in this newsletter useful. If you have comments regarding information in this newsletter, or would like to see in future newsletters, please contact:

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