



# UMPQUA VALLEY Hort News

Horticultural Newsletter for The Umpqua Valley

September/October 2011

**Oregon State**  
UNIVERSITY

Extension  
Service  
Douglas County

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& Distribution  
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Agriculture, 4-H Youth,  
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Extension Sea Grant  
Programs. Oregon State  
University, United States  
Department of Agriculture,  
and Douglas county  
cooperating. The Extension  
Service offers its programs  
and materials equally to all  
people.

Please note: The contents of this newsletter are provided for educational purposes, and are not intended to be taken as strict recommendations for treatment of any orchard pest or condition. ALWAYS READ THE MATERIAL LABEL PRIOR TO APPLICATION.

## 2011 Calendar of Coming Events

**August 25 OWRI Viticulture and Enology Colloquium.** Join the OSU viticulture and enology researchers and Extension agents at LaSalle Stewart Center on the OSU campus in Corvallis. The colloquium begins at 9am and goes until 3:30pm. For more information about speakers, topics, and registration visit: <https://conferences.bus.oregonstate.edu/Conference/owri-3rd-viticulture-enology-research-colloqu/registration>

**Sep 10, 11 Umpqua Valley Wine Art and Music Festival.** Support our local wine industry, and local artists by coming out to the 42<sup>nd</sup> edition to this local festival. <http://uvwineartandmusic.com/>

## Thousand Canker Disease of Black Walnut

Over the past four years OSU pathologists have identified many cases of black walnut mortality around Oregon. It is now known the disease, Thousand Canker Disease, is being caused by a fungus, *Geosmithia morbida*, and is being spread by the Walnut twig beetle (WTB). Oregon is not alone in the west with these pest pressures on black walnut. Currently the disease and insect pest have been identified in Colorado, New Mexico, Utah, Idaho, Washington, and California. Dying or dead trees can be found in most counties of the Willamette Valley, and Southwest Oregon. Curiously, this disease began in the western U.S. where black walnut is an introduced species. Only recently has this disease been found east of the Mississippi River where black walnut is native. Foresters in eastern areas of the U.S. are very worried that this disease and insect pest could cause another large dieback of hardwood trees as with Dutch elm disease, Emerald ash borer, and Chestnut blight.

If you think you may be losing black walnut trees to this disease and insect pest, here are a few symptoms to help your diagnosis. Symptoms include progressive crown thinning, bark cankers, branch dieback, and eventual mortality. If you pull back dying bark from a walnut tree you will see WTB galleries that were eaten into the wood.

If you want to protect your black walnut trees, be very observant to any dieback and be quick to check your trees for the beetles. Beetles can be controlled by systemic insecticides that include imidacloprid as an active ingredient.



## Irrigated Crops & Water Saving Decisions

With cities and industries competing with agriculture for scarce water resources, some recently released research from Colorado State University and the Agricultural Research Service of the USDA could be very helpful to you.

As field crop producers in many parts of the west see the value of water rights rising, many are considering whether to reduce the amount of water being applied to their crops allowing them an opportunity to sell some of their allotted water. This research in Colorado was done with corn, wheat, sunflower, and pinto beans in an annual rotation.

Researchers set out to demonstrate what level of irrigation would demonstrate the best yield for the actual amount of moisture used by the crop plants. Six levels of irrigation were used in the plots, from 100% of irrigation needs, to 40% of full irrigation needs. Soil moisture levels were monitored down to 6 feet deep, weather station data was tracked, and crop leaves were monitored for transpiration rates. Drip irrigation systems were used to maximize the efficiency of water delivery.

Results from three years of data so far are very interesting. For example with corn, yields varied from 210 bushels per acre for full irrigation, down to

130 bushels per acre for the 40% of full plot. The researchers found that one acre of land needed 600,000 gallons of water to produce 200 bushel corn. After plants were established, the consumption rate of the corn plants stayed about the same through all the plots, about 2,500 gallons of water per bushel of corn.

In traditional irrigated crop production most producers and crop specialist believed that crops use water less efficiently as they get more of it. In other words, if you over irrigate, your crops will use more water to produce a given bushel of grain. This research clearly showed with all the test crops that there is no reduction in the amount of water taken to produce each bushel of crop yield. Excess irrigation simply wastes water that is not used by your crops.

The implication of this research is quite clear, limited irrigation on field crops is not financially an attractive alternative. Irrigated field crop producers will probably be better off financially to use full irrigation on a portion of your acreage, than to use limited irrigation on all of the acreage. This would maximize yields on your irrigated land, while allowing a person an opportunity to sell or lease water rights from the remaining acreage.

This study was made on annual field crops and is not relevant for perennial crops like orchards, vineyards, or berry crops.

## Growing Degree Days in 2011

Since we are now moving into August and hot weather has still not visited us, it is time to discuss the likely prospects of a year considerably cooler than last year. Since I keep track of the accumulating heat units it takes to mature crops, it is easy for me to see how far behind our growing season is falling in relation to a more average year. At last count Roseburg has accumulated 1134 GDD versus a 30 year average to date of 1383 GDD. Last year at this time we had accumulated 1320 GDD by August 1, and remember how cool we thought it was last year.

If you are not familiar with the process of calculating Growing Degree Days the formula is  $GDD = \frac{\text{max temp} + \text{min temp}}{2} - 50$ . The system of tracking heat units called "Growing Degree Days" is calculated by adding the daytime high temperature with the daytime low temperature and dividing the sum by 2

(getting a daytime average). Then subtract 50 from the sum. The only adjustments you need to make when calculating GDD is to remember that the maximum temperature you can record for any day is 86 F. Why? Because plants are not growing better at temps over 86 F, they are transpiring more than growing and using their energy to cool off. Why subtract 50 from the daytime average? Because plants are not growing under 50 degrees either so you eliminate those degrees. Here is an example of GDD. The daytime high is 86, the low is 60. We add the two numbers to get 146 and divide by 2. Our average temp is 73 minus 50 degrees giving us 23 GDD accumulated on this day. Most systems track GDD from January 1 through the year. The beauty of a system like this is that you can compare one year, or part of a year, to another to know how you stand versus average.

To give you an idea of how difficult it is to catch up on lost heat units review the following chart for Roseburg Growing Degree Days:

Year	Jan 1- Aug 1	Jan 1- Sep 1	Jan 1- Oct 1	Jan 1- Nov 1
2011	1134	1734 est*	2188 est*	2381 est*
2010	1320	1929	2388	2591
30 yr. Avg.	1383	2019	2481	2682

\*Estimates are made by using average data between present and future dates.

This data is calculated by using the weather.com agriculture site calculator at the following link:

<http://www.weather.com/outdoors/agriculture/growing-degree-days/97470>

(continued from page 2 "Growing Degree Days...")

If 2011 continues to be an average at best heat unit year, you can see we will end up with 200 GDD less than 2010 by October 1. That is about 10 days behind the 2010 crop development cycle, and 2010 was about 5 days behind the long term average.

To make up 200 GDD over the next two months we will need to see the following. The 30 year average accumulated 18.3 GDD per day. We will need to make up 100 GDD each month or 3.3 GDD per day. We will need to average 21.6 GDD per day. We can achieve that by having an average high of 86 and low of 58 for August and September. Remember if we hit a hot week or two over 86 we don't

accumulate those temperatures over 86. We pretty much need to have perfect weather to achieve the heat units from last year's cool season.

If you are keeping track of your own high and low temperatures you will be able to make a more accurate estimate for your location. I hope your site is getting more heat than Roseburg.

If you are growing a perennial fruit crop (winegrapes, apples, peaches, pears) make sure you have not over loaded your vines or trees. It is a little late to be gaining much from thinning fruit but I would not be comfortable trying to finish a heavy set crop given our likely heat units from here to November.

## Spotted Wing Drosophila

In 2009 OSU Extension joined with WSU and UC Berkeley to get a major grant from USDA to study the Spotted Wing Drosophila (SWD), and develop effective controls. Amy Dreves from OSU has been heading up the research effort in Oregon. Amy and others have covered the state over the past two years, meeting with growers and gardeners, and advising them about their ongoing research findings. In 2010 the SWD was present in most crop producing areas of the state, however the insect pest did not cause much crop damage.

Because the SWD did not cause much crop damage in 2010, it is my feeling that many producers and homeowners assumed that the insect threat was not very serious. As they prepared for the 2011 crop year, planning a SWD control program was not a high priority. Now fast forwarding to the middle of the 2011 crop year we are seeing some growers abandon a large percent of their fruit crops because of insect infestation. The SWD have not chosen one favorite crop to attack but have focused on nearly any soft fruit crop. Crop infestation has been reported in strawberries, blueberries, raspberries, blackberries, and cherries. You may wonder some u-pick operations this year seemed to close early with fruit still in the trees. The reason was that fruit was infested with SWD or producers could not afford to let the ripe fruit hang for fear of infestation.

My SWD vinegar traps in 2011 had very light catches up until the middle of July. Then in the third week of July catch numbers increased dramatically, and all areas of the county had SWD present in traps. It seems that the SWD were busy getting established and dispersed last year, setting the stage for this year's serious crop damage.

The time is right to make sure you share this information with your friends, family, and anyone



else who is gardening in our county. Ask them if they have lost fruit crops to spoilage that is accelerated by rot entering little holes in their fruit. If they have lost fruit to crop deterioration, have them look for little white larvae in the softening fruit. If crop loss is a problem this year have your contacts come by our OSU Extension office to get a flier on SWD, or go online to see the updated website at OSU: <http://swd.hort.oregonstate.edu/> This will inform them about the pest and how to deal with the pest.

One thing I have learned this year while working with my own crops and talking with others is when the most effective time to apply controls is. That key time is when your fruit crop gets full sized and starts to color. Don't wait until the crop is ripe and ready to harvest or the insect will have already laid eggs in the fruit. Some homeowner available pesticides that are working well to control SWD include spinosad, malathion, pyganic, and sevin. Commercial producers should visit another part of the OSU web site to look for specific crop ideas and controls. [http://swd.hort.oregonstate.edu/information\\_growers](http://swd.hort.oregonstate.edu/information_growers)

We are currently recommending that when you are done harvesting fruit, if there are residual fruit still in the trees or bushes you should apply a second spray. This can be especially important if you have other fruit crops developing in the same yard or vicinity. We have had a lot of calls from people with infested cherry crops. Most of them are just leaving the fruit in the trees. The birds may eat many of them, but if you have a developing peach crop you should spray the cherry tree and then spray the peach when it is full sized and starting to color. This method is working well for me so far. I will share any other ideas that come from the OSU-WSU-UCB research group as they publish information for the public.

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The logo for OSU Extension Service, featuring the letters "OSU" in a large, bold, sans-serif font, with "Extension Service" and "Oregon State UNIVERSITY" written in smaller text above and to the right of the "OSU" letters.