



CRANBERRY VINE

WSU Long Beach Research and Extension Unit
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June 2016

MEETINGS

Washington Cranberry Summer Field Day:

This summer we will be at the PCCRF Farm on Friday, July 29, 2016. Registration is at 8:30 a.m.; presentations will be from 9 a.m. to 2 p.m. Three pesticide credits will be given.

Oregon Cranberry Summer Field Day:

The 2016 Oregon Field Day will be Tuesday August 2, 2016. Call 541-572-5263 for more information.

PEST MANAGEMENT AND PESTICIDES

Lorsban: Last chance to use up existing stock. But be mindful of MRL restrictions, PHI and don't spray it unless you actually have something to spray. Contact WSDA for disposal of leftover product.

Tipworm: In our surveys across growing areas, we are finding numerous beds in Long Beach with extensive tipworm damage. In previous years it was confined to only a few locations. Be on the lookout for tipworm on your beds. We seem to find it mostly on unproductive off-type Stevens beds. Look there first.

Twig blight/Lophodermium: With the emphasis of fungicide timing targeting the

bloom window, we may be letting our guard down for the post-fruit fungicides to control twig blight. If you or your neighbor don't have twig blight do we really need additional fungicide application in July?

Since *Lophodermium* spores are windborne, they could find their way to your bed from a long distance, so a prophylactic spray is good insurance. Apply a broad spectrum fungicide like chlorothalonil or mancozeb for this purpose. This should always be applied last in any fungicide rotation to prevent resistance to the single mode of action fungicides, like Abound, Indar or Proline. Chlorothalonil or mancozeb after bloom will also help suppress storage pathogens and should be considered important for fresh fruit growers.

Red leaf spot on new plantings: Vigorously pushing new vines will result in this pathogen infesting new plantings. Treat with any fungicide before it gets too serious to prevent secondary pathogens that kill-out that new growth.

Fireworm: Everyone has likely applied their 2nd generation spray. Just as a reminder: when treating summer generation with growth regulators (Intrepid or Altacor), timing is 2 weeks after onset of moth flight, and again 10 to 14 days later if needed. For other insecticides, such as Delegate or

For fruit rot control they found a Proline or Indar+Abound application provided better control than an Indar, Abound, Bravo, or Dithane application. For cost reason alone (less \$/ac), I would encourage the use of Proline to be part of every fungicide program in 2017. But realize the need for resistance management (you can't just use Proline). For tipworm control they reported that Altacor and Lorsban were OK, and better than Diazinon, and nothing else worked (they didn't have Sevin in their test).

More interesting was their fireworm data. They found Altacor was better than Diazinon, Lorsban, Intrepid or Delegate. This would confirm our studies, and again indicate that, other than price, there is no reason to be using an OP. As noted for Proline, for resistance management reasons we can't just always use Altacor.

Summer weed control: Callisto via chemigation, Callisto or Callisto + Select tank mix for spot spraying are good options for many weeds. Be sure to add a surfactant for spot spraying as per label recommendation. Do your second Callisto application just when the weeds are growing out of the first treatment. Stinger and Curio can be used if you have bud set, but I've never seen it be 100% safe, so do this sparingly and follow the label instructions. Wiping with Roundup is good for the tall woody species. I will often see wiping damage, however, from the wiping crew being less than careful.

Just as a cautionary note – any backpack sprayer that has had Roundup in it should never be used for Callisto, Select or Stinger. Label it "ROUNDUP ONLY" on the top, bottom, sides, front and back of the backpack. Spray paint "death to user who screws up" on it, and use a different make of sprayer for your Roundup backpack. It is

Summary of Wisconsin Pest Management Trials: I would encourage you to look at some nice summary tables in the 2016 WI Cranberry School Proceeding. These are for WI conditions and boom application, but it does provide relative efficacy data of different products for different pests. Two highlights are the fungicide and insecticide tables.

For girdler, the control options are limited - apply nematodes 2 weeks after end of moth flight, use late summer flood and regular sanding. For weevil control see recommendations listed in WSU's Annual Cranberry Pest Management Guide <http://cru.cahe.wsu.edu/CEPublications/eb0845e/eb0845e.pdf>. We have been working on developing cost-effective control alternatives for weevil, but have yet to get consistently good data sets on some of the alternatives.

Cranberry girdler and blackvine weevil: If you see a lot of beautiful silvery-white micro-leps with the cute "snout" on front of head making their characteristic short, jerky dancing flights as you walk through the vines – you may have a girdler problem. A bad girdler infestation can exist even with low pheromone trap catches. Look for old feeding damage in the wood of the vine, just below the trash line. If the leaves show no sign of notching it is girdler rather than weevil.

Avant, apply insecticide 10 days after peak moth flight. Spring generation is a much easier target than the second generation. If you had high counts in your traps figure out why. Is it a localized effect where a skip on the edge caused a buildup or did you mess up with first generation timing? I suspect the latter is the case as we were several weeks ahead this year. Another reason to not use calendar spray dates.

too easy to get confused, and the implication too serious to not try to make this one part of weed control idiot-proof. Farms with big crews need to be extra-cautious and make this part of their annual worker safety training.

Miscellaneous pollinator information:

Bee kill: A serious kill was reported on a PNW cranberry farm in 2016 when an adjacent cranberry neighbor used an OP during bloom. The Department of Agriculture is investigating. This is a reminder – you are responsible/liable not just for the bees on your farm but for those on your neighbor's. Don't use these products if the neighboring farms still have their bees. We have bee-safe alternatives to OPs.

Enhancing pollinators: New research compiled from small berry farms from around the world has found they could significantly boost crop yields by taking steps to increase pollinator diversity on the farm. *Science*. Vol. 351, January 22, 2016, p. 388. doi: 10.1126/science.aac.7287. See previous newsletters for suggestions for plants to use around cranberry beds to enhance bumble bee populations. Funds are available from the NRCS for this type of activity and some growers have already used them for this.

Interestingly enough, a new study from Massachusetts indicates that the massive amounts of cranberry pollen available to bumblebees during bloom on commercial cranberry beds boost colony populations compared to bumble bee colonies not having access to commercial beds. There you go – the answer to pollinator decline - cranberry farms!

Are neonicotinoids really the bad guys?
Data is accumulating to suggest this may not

be entirely true. For individuals it is true, but honeybees and bumblebees exist as part of a super-organism, the hive, and there are few large-scale field studies of honeybees and bumblebees foraging in neonic-treated crops that show adverse colony-level effects
See

<https://www.geneticliteracyproject.org/2016/03/01/bee-health-update-latest-field-studies-conclude-neonicotinoids-not-key-problem/>.

This doesn't address the long-term health of species like bumble bees, which rely on new colonies being started every year from overwintering new queens. I highly suspect this is still a big concern, and we should still only use these insecticides as a spot treatment on an as-needed basis.

Fungicides and bees: Fungicides are the most frequently found pesticide group found in honey bee pollen. For pollen collected from bees in Long Beach several years ago we found high copper, while in other areas Bravo and some of the new fungicides are common. Trying to tease out what this means for honey bee or bumble bee health, when used in combination with insecticides, has been difficult. There may be a sequence of combinations that is more or less deleterious, but it will take years to sort out. There will be news along this front for years to come, with serious implications to the cranberry industry.

MISCELLANEOUS:

Early harvest: New TACY incentives will push growers into ever earlier harvest. Here are a few things to be mindful of if you are going to chase those early harvest incentives for the very early coloring varieties.

1) If it is a dry year, you may lose too much water off your farm with a flood harvest.

details for cranberries. If you want to be involved, go the website to find out more. *Getting unstuck*: Farm equipment is going to get stuck in the mud. We have all been there. Extraction, however, can go really badly. There is a new publication from Purdue on safe and effective extraction methods to remove stuck vehicles without injuring the drivers, bystanders, equipment, or the environment. There are great pictures and this is worth the read. <https://www.extension.purdue.edu/extmedia/PPP/PPP-98.pdf>

New federal regulations for pesticide use: New Agriculture Farmworker Protection Standard go into effect 1/1/2017. Most importantly this standard will mandate annual training for field workers and pesticides handlers, rather than every five years. Additional changes relating to what needs to be taught are scheduled for 2018. If you want more details see: [I.usa.gov/USDA/4M](http://www.usda.gov/USDA/4M). And of course don't forget about L & I inspections, they have additional requirements.

Pacific and Grays Harbor Conservation District: If you haven't hugged your local conservation district staff lately, you should. They have been doing an outstanding job getting things implemented for the cranberry industry in SW Washington. They also just helped secure a grant that will help the Grayland Drainage District (another group that deserved a hug- although I am not sure they are the hugging types) to stabilize the tidegate that empties out at Washaway Beach. Without this stabilization, there were good odds that we would lose all of the south section of Grayland to tidal inundation this coming winter.

The future of cranberry farming: I am watching the returns for growers decline and with the oversupply it could drop to

This is water that you will need to irrigate with later in the year. 2) If you don't have a lot of larger mixed terminal buds (flower buds) formed yet, the early flood and harvest will shut down the plants and could reduce bloom in the following year. 3) On/off hiring of harvest labor for the mixed harvest timing could be a problem. 4) Fruit will continue to size during September. In 2015, Crimson Queen fruit increased in size 2.5% every two weeks between August 28th and September 28th. However, regardless of this size increase, with the current incentive you are \$500/ac better off to harvest early than to wait for fruit size, especially considering the likelihood for greater rot. 5) Deer tend to love those early ripening varieties. Harvesting them before the deer helps minimize that problem. 6) Fall post-harvest weed control is an option for beds harvested earlier. Most of the time the frost kills the weed canopy before it can be treated with Stinger or Curio. For some weeds this is a very useful treatment. For beds in big need of control for lotus or sheep sorrel, consider an early harvest followed by Stinger before major frosts occur. 7) Fall flooding for cranberry girder control can be very effective. If you have a bed being destroyed by girder, consider a very early harvest followed by 1-2 weeks of flooding. This has to be done while girdlers are still in their larvae stage (ends mid-September most years).

Voluntary Stewardship Program (VSP): This is a statewide initiative in association with the WA State Conservation Commission to help maintain your farm's economic viability alongside the health of the county's watersheds. Pacific and Grays Harbor County have both adopted VSP, and it is important that cranberry growers provide input. For more information see <http://www.co.pacific.wa.us/dcd/VSP.htm>. There will be numerous meetings to iron out

\$30-\$35/bbl base price for Ocean Spray growers and remain low for independents. Figuring out how to capture profit from a cranberry farm is becoming more challenging. Depending on your resources, you can: do nothing, lower your costs and hope to survive in an over-supplied market, tweak your current production and hope to improve yield and quality, renovate with high dollar new huge yielding varieties, or renovate with the lower cost, not so new, varieties that have high, but not 'huge' yield.

The first two are options, if you can hold out for the next ten years and don't want to invest more time or money in farming. If you are really trying to save on inputs, closely examine your fertilizer and pesticide applications to see which ones are really needed versus which one are you can get by with. I've seen farms lose tens of thousands of dollars for the want of spending an extra \$1000 on additional fireworm control, and I've seen farms spend thousands of dollars fertilizing beds that can get by on 1/3 the input. Tweaking your farm for better production takes money, but is a lot less than a full renovation.

Most all farms have spots that have dieback and don't produce well. Sanding, sawdusting, or replanting those areas are good options. But don't spend too much good money trying to get off-types to be productive. Most times, spending significant money improving marginal beds (trying to get from 50 bbl/ac back to 100 or 150 bbl/ac isn't going to pay for itself). Replanting with new 400 to 500 bbl/ac varieties are theoretically possible for our area, but we have yet to see those yields being consistently maintained.

We can use 400 bbl/ac at \$35/bbl as the upward expectation after 5 years. This, less our production cost of \$3000/yr gives us

\$11,000/ac/yr as income we can use to pay off the loan for renovation (~\$35 to \$40K). So if we are lucky by year 7 to 9 we should be debt free.

How does this compare if we plant the not so new but still good varieties that cost less, like Pilgrim or Grygleski 1? Renovation costs are about half; yield should be ~300 bbl/ac but there might be a color, size and/or low rot incentive that might be \$38/bbl. This gives a return of \$8.4 k after production cost. In theory we could pay off the debt at least two years quicker than we could with the higher cost selections. By then some of the dust might have settled and we will know what does what best for our area, or there might be even better varieties to plant.

These back of the envelope calculations are just suggestions to force to you think more about your long-term options. I am not suggesting to not plant the best new selections, only that they are not the only or the best choice depending on your long-term farm plans.

**Tentative Speakers: WSU 2016
Cranberry Field Day- Friday, July 29th
8:30 a.m. to 2:00 p.m.**

- Kim Patten, WSU: Update on varieties, pest management, nutrients, weeds.
- David Bellamy, OSC-WA: Phosmid and fresh fruit, IPM results for 2016.
- Grower Panel: Don't do stupid – frost protection, tipworm control, sheep sorrel control, top three steps for fresh fruit.
- Cassie Bouska, OSU: Invasion from OR- how to recognize scale – what to look for and why.
- Brian Mauza, OSC-BC: scale control studies and field decline in BC.
- Lindsay Wells, OSC-WI: fresh fruit practices in WI.

WEATHER HISTORY – WSU Long Beach Research and Extension Unit									
Month	2014	2015	2016	20 Yr. Ave.			Monthly Growing Degree Days (based 45°)		
				Precipitation (inches per month)	2014	2015		2016	
January	5.9	9.5	16.4	12.0	16	65	79	41	
February	7.5	6.6	11.9	7.4	24	139	129	40	
March	13.3	7.3	14.0	10.0	86	121	117	59	
April	7.3	4.1	2.4	5.6	141	114	241	108	
May	5.9	1.3	1.4	3.8	382	248	310	240	
June	3.3	0.4		2.8	356	367		332	
July	1.2	0.2		1.2	462	533		438	
August	1.5	2.5		1.7	474	532		446	
September	3.5	2.4		2.8	478	367		371	
October	11.8	5.1		7.5	354	350		225	
November	9.3	17.0		12.2	120	77		85	
December	12.5	19.8		12.4	97	60		34	
Totals	82.9	76.1	46.1		2990	2972	876		

Current weather: Growing degree days for 2016 are higher than the two previous years. For June 23rd we are 142 GGD ahead of last year. Fruit set looks good on many farms, and crop expectations are good, but cautious compared to 2015. While our winter was wet, rainfalls in April and May were well below normal, and June has been approaching a normal precipitation for the month.

WEATHER

- WSDA: “Next Steps” for Diazinon and Chlorpyrifos use in Washington cranberry beds.
- David Cottrell: Tidal intrusion into Grayland-next step to prevent erosion/storm damage to the Grayland tidelgate.
- Mike Nordin, Pacific and Grays Harbor CD: VSP, pesticide storage shed and other programs.
- Equipment demo: High pressure injection pump- WSU and new sander demo –Matt Reichenberger.

Field Day Speakers cont.

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