

Small Fruit Update



Providing Northwest berry growers with the information they need when they need it.

The Small Fruit Update is sent out weekly during the growing season by [Peerbolt Crop Management](#) and is funded entirely by the Northwest berry growers and industry through their commissions and councils.

August 12, 2015

Week 33

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- [Industry professionals discuss extending blueberry shelf life](#) (8/10, [andnowyouknow.com](#))
- [Strawberry Bot: The latest on the patent-pending strawberry picking robot](#) (8/7, [andnowyouknow.com](#))
- [N.C. State researchers look at mechanical blueberry harvester](#) (7/13, SE Farm Press)

[The Weather Cafe](#) by Rufus La Lone [Small Fruit Cold Storage report](#)

Items of note this week:

- Main message to all growers—keep the water flowing and check soil moisture levels! Some fields getting regular irrigation are still showing stress. **You've got to check the soil to make sure the system and schedule are adequate for maintaining soil moisture throughout the root zone.**
- A couple more links that didn't make the top box:
 - [How New Jersey tamed the wild blueberry for global production](#) (8/4, NPR article & video) Nice story on the commercial blueberry's origin.
 - [Strawberries are in big trouble, Scientists race to find solution](#) (8/4, Washington Post) This is on the phase-out of methyl bromide.
- The '[Andnowyouknow.com](#)' website has had some useful stories on the business side of the berry industry lately. Might want to keep it on your list of sites to check once and a while. Yes, it is a strange domain name...
- I'm de-emphasizing the SWD alert/resource link but the information is still in the [Grower Resources](#) section.
- Also in the [Grower Resources](#) section are links to new OSU Extension publications & videos—All are free online. Information on Mummyberry Management and Weed & Disease I.D. as well as Integrated Pest Management (IPM) Videos. Useful information from OSU Extension. Take a look.

Disseminating information for:

Washington

[Washington Red Raspberry Commission](#)
[Washington Blueberry Commission](#)
[Washington Strawberry Commission](#)

Oregon

[Oregon Raspberry and Blackberry Commission](#)
[Oregon Blueberry Commission](#)
[Oregon Strawberry Commission](#)

British Columbia

[B.C. Strawberry Growers Association](#)
[Raspberry Industry Development Council](#)
[B.C. Blueberry Council](#)

National

[North American Blueberry Council](#)

Tom Peerbolt, SFU Editor

For the SWD resources and other crop management information go to the [Grower Resources](#) section.



Photo by Tom Peerbolt

WSU entomologist, [Dr. Lynell Tanigoshi](#), visiting with SW Washington grower, [George Thoeny, Jr.](#) a couple of years ago. Lynell will be retiring after this season. He's been a great support for the Northwest berry industry for more years than he's willing to admit.

Events [Go here for Full Event Calendar](#)

Regional Berry Events

- **August 18 — Oregon Strawberry Commission Fresh Strawberry Plasticulture Workshop and Demonstration** ~ 9:30-5:00 Forest Grove, OR [Go here for the agenda](#).
- **August 20 — Red Raspberry Soilborne Diseases Field Day** ~ 3-4:30 pm, Lynden, WA [Go here](#) for the details. **Participants/Sponsors:** WSU, USDA, & Walters Ag Research.
- **December 2-4 — Washington Small Fruit Conference** ~ at the NW Washington Fairgrounds, Lynden, WA. [Go here](#) for more information and to register.

National & International Berry Events

- **September 7-9 — 5th Annual International Blueberry Organization Summit** ~ Coffs Harbor, Australia. [Go here](#) for meeting information.
- **September 13-16 — International Symposium on Mechanical Harvesting & Handling of Fruits and Nuts** ~ Richland, Washington. [Go here](#) for meeting information.
- **October 7-9 — [North American Blueberry Council](#) & [US Highbush Blueberry Council](#) Fall Meetings** ~ Las Vegas, Nevada. Details [Go here](#) for details
- **October 13-15 — 6th Biennial Berry Health Benefits Symposium** ~ Madison, Wisconsin. [Go here](#) for all the details.

Regional Commission/Council meeting schedules

I'll update the commission/council meeting schedules, agendas and locations as the information becomes available. It's a little spotty right now. You can also contact the individual commission/council office for further information. Their website links are in the sponsor box at the top of this newsletter.

Washington Red Raspberry Commission Email Contact: henry@red-raspberry.org

- **September 16** — Lynden, WA.
- **October 28** — Lynden, WA.
- **December 2**— at the [Washington Small Fruit Conference](#), Lynden, WA.

Oregon Blueberry Commission Email Contact: jenny@ostlund.com

(all meetings are scheduled for noon at the Chemeketa Events at Winema, Building 48, Room 210, Salem)

- **September 22**
- **November 10**
- **January 12** (research updates 7:30-11:30 am; committee mtngs 11:30am-12:30pm; Commission mtng 12:30pm)
- **March 15**
- **April 26**

Oregon Raspberry and Blackberry Commission Email Contact: berries@oregon-berries.com

- **September 16**

Oregon Strawberry Commission Email Contact: berries@oregon-berries.com

- **September 23**

Regional reports

British Columbia, Fraser Valley

[Go here](#) for the B.C. Blueberry Council's Blueberry IPM Report for 8/7.

British Columbia, Fraser Valley (Monday 8/10)

A few showers this morning in areas which wasn't expected. SWD pressure has been low. Some traps that had high #'s long before harvest began have had no females in last 2 weeks and only 1 male. Interesting.

- **Blueberries:**

- **Bluecrop:** Will finish up by machines by early next week.
- **Elliott:** Much of first pick Elliot is off with at least 50% harvested first pick. Many fields will only have 2 picks. Some growers beginning second pick. Had some splits in Elliot show up mid-late last week from previous rains on Sunday. Some fields had minimal if any splitting. Quality good other than that. Flavor is unbelievable, so much so, at times I am wondering if I'm eating Elliot or something else. I have found it to be sweetest on higher organic matter fields.
- **Aurora:** Some Aurora has been harvested.

British Columbia, Fraser Valley (Monday 8/10)

From [Tom Baumann](#), Director of the Pacific Berry Resource Centre & UFV's Ag Dept. Coordinator:

Not much to say, except Eastern Fraser Valley didn't get a drop of moisture this fine Monday.

- Nice news story last night that the **pumpkins** are ready for our early Thanksgiving! 6 weeks plus too early.
- **Strawberries**-Heat and plastic mulch is making a potent combo for strawberries to go down with Verticillium. Unusual for around here.
- **Raspberries** really strong going on mites, oh, I meant to see yield right now. Excellent flavor and color. Floricane ones looking really pathetic, please look after them.
- **Blueberries** going strong again with later varieties. Lots of yield sitting in the Elliott and Aurora fields, should be able to get them all, yes two picks or three. Not much growth for next year in fields where no irrigation, looking sad after harvest.

Northern Washington, Whatcom County (Monday, 8/10)

- **Blueberries:** Heat after that rain made much fruit soft, and some shrivel. Only Elliott and Liberty left and much is too small to make #1 grade. SWD turned out to be not as much of a threat as we all thought it would. Light sprinkles this AM set back what fresh harvest there is. Season winding down very quickly.

Western Oregon, Willamette Valley

- **Blueberries:** (Tuesday, 8/11) Processed: Second and third picks of Jersey, Bluecrop, Liberty and Elliott are coming in. Fruit quality remains good. We're receiving more blueberries than we did last year but that's due to both more fields and maturing fields. Overall yields seem down from last year as will the Oregon total crop size it seems. Certainly berry size is down although actual fruit numbers are up. That's the result



of that great, early spring (above average fruit set) and the hot summer (below average fruit size). As far as SWD, we had one grower who stopped treating and then, about two weeks later, decided there was enough fruit to pick one more time. We found a few larvae in those loads so pressure is out there. How much certainly depends on the individual field site. As said before, too many unknowns to stop regular SWD prevention treatments if you're still picking for sure.

- **Blueberries:** (Tuesday, 8/11) *Fresh:* Very good quality Auroras as well as Elliotts are still being picked. Weather is mild enough to keep us going for a little while depending on the field.
- **Blackberries:** (Tuesday, 8/11) We've gotten through Evergreens once and will start the second pick very soon. Quality is good. No SWD in the fruit but growers have gotten used to the seven day spray schedule and will stay on it. Some SWD larvae can be found in the Himalayan blacks in the field borders but even there numbers are very low. Seems like we've still got some work to do figuring out when and where this is a problem. That said—growers shouldn't back off on sprays, there's still a significant risk factor.

N. Washington Disease Management Research Update

From [Tom Walters](#), Walters Ag Research, Anacortes, WA. Tom is a private consultant/researcher. (8/11)

- **Raspberry fumigation trial:** Summer nematode sample results are in: In a replant fumigation trial with [Maberry Packing](#) in Whatcom county, shallow-applied [Vapam](#) and [Dominus](#) did an excellent job at controlling [root lesion nematodes](#) compared with the industry standard, deep-shanked, nontarped [Telone C-35](#) treatment. Plants in the [Vapam](#) and [Dominus](#) treated plots were also off to a better start; with more and longer primocanes. We'll keep checking to see if these differences hold up.
- **Drip-applied [Vydate](#) trial:** [Inga Zasada](#) (USDA-ARS plant pathologist) and I have been comparing drip applications of [Vydate](#) with the currently labeled surface applications in a trial with raspberry grower, Rob Dhaliwal. So far, it looks like the drip applications are working just fine. With a drip application, you wouldn't have to wait for rain to apply the Vydate. That would be a real advantage in a year like this one.
- **Raspberry [botrytis fruit mold](#) trial:** The dry weather has made it hard to get much in the way of botrytis fruit mold data in this year's trials, but we did manage to find a few moldy berries in raspberry plots under a mist system. Thanks to a very accommodating Rob Dhaliwal for letting us set that up.



Machine harvesting blueberries

Photo by Jason Myer

Industry news/resources

Newsletters/ berry reports

- [Whatcom Ag Monthly](#) Produced by WSU Whatcom County Extension. Includes excellent berry crop information.
- [National Berry Report](#) Daily fresh market berry reports. Hosted by the California Strawberry Commission, this report is generated from data from the USDA Agricultural Marketing Service and is updated daily.
- [Market Report from General Produce for Week 32](#) (8/10)
- [USDA Market News \(Fruits & Vegetables\)](#)

Magazine/website compilations

- **The Packer:** [blueberries](#), [blackberries](#), [raspberries](#), [strawberries](#).
- **Growing Produce:** [recent berry articles](#).
- **New Addition: Andnowyouknow.com:** [blueberries](#), [blackberries](#), [raspberries](#), [strawberries](#).
- **Fruitnet-Eurofruit:** [recent berry articles](#).
- **Fresh Fruit Portal:** [blueberries](#), [blackberries](#), [raspberries](#), [strawberries](#).

Berry research blogs

- [Strawberries and Caneberries](#) by Mark Bolda, UC Davis Berry Extension Agent. **Recent Entry: (8/10) Nifty plastic mulch removal machine can save a lot of money.** Reports on recent insect and disease research and observations in California.
- [Team Rubus](#) by Gina Fernandez, North Carolina State Small Fruit Specialist. **Recent Entry: (8/10) Topics for NARBA Grower meetings in 2016.** Reports on issues in blackberries and raspberries from the Southeast.

Climate/water

- [Drought Management: Updates, Tips and How To's](#) (Good Fruit Grower, Special Edition)
- [USDA extends drought disaster to more PNW counties](#) (8/6, Capital Press)
- [Weather Trends International launches ag-focused website](#) (8/5, Precision Ag)
- [Researchers: Replenish aquifers by flooding fields in winter](#) (8/4, Capital Press)

Pollinators

Good flowers & bad flowers...

- [WSU bee researcher touts flower power](#) (8/9, Capital Press)
- [Flowers can endanger bees, study finds](#) (8/7, Ag Professional)

Food Safety

- [Temperature control: A critical food safety element](#) (8/10, Food Safety News)

Research

- [Scientists find better way to save strawberries from a freeze](#) (8/10, Growing Produce)

Technology

- [Plastic mulch machine can cut labor costs in half](#) (6/22, FGN)
- [AutoProbe automated soil sampler expands grower-centric dealer network](#) (7/28, Precision Ag)
- [Precision Ag insights: Drones on demand may be next destination for UAV's in agriculture](#) (8/10, Ag Professional)
- [Yield monitor tips, new technologies](#) (8/6, Precision Ag)

Labor

- [Tips to Work with new rest break ruling](#) (7/20, Good Fruit Grower)

West Coast

- Washington: [Inslee's trade trip to include pitches for spuds, blueberries, wine](#) (8/10, Capital Press)
- Oregon: [Oregon cold storage plant announces expansion](#) (8/7, Capital Press)

North America

- Florida: [Strawberry growers learn about labor, Mexican competition](#) (8/5, The Packer)
- Maine: [Blueberry growers hoping for warmer temps, steady rain](#) (8/6, The Ellsworth American)

International

- Poland: [Strong demand offsets increased competition for Polish blueberry shippers](#) (8/7, Fresh Fruit Portal)
- United Kingdom: [Berry Gardens managing director reports soft fruit market could hit 1 billion pounds \(currency not weight\) this year](#) (7/8, Horticulture Week)



Grower Resources ---- Week 33

- [SWD: The risk from non-crop plants near to cultivated commercial ones](#) (7/27, Fresh Plaza)
- [Understanding soil nitrate analysis to improve management](#) (8/10, Ag Professional)
- [Guiding strip-tillers to success with precision](#) (8/10, Ag Professional)
- [Suspect PPO-resistant pigweed fields showing up everywhere](#) (8/7, Ag Professional)

New Extension Publications & Videos—All free online

Useful information from OSU Extension.

- **Blueberries:** [Mummy Berry Management in the Pacific Northwest](#) *Jade Florence, Jay W. Pscheidt*
4 pages. Briefly describes the mummy berry disease cycle and available management methods.
- **Integrated Pest Management Videos** *Silvia I. Rondon, Mary K. Corp, Stephen M. Van Vleet, Stuart Reitz, Pamela Hutchinson*
 - [Integrated Pest Management: Pest management Integration](#) 4 minute video
Explores Integrated Pest Management (IPM) as an approach to protecting your crop from insects, weeds and plant pathogens.
 - [Monitoring Diseases in The Field](#) 3 minute video.
How to do field scouting for diseases and vectors. Recognizing diseases and vectors early will help you control them and minimize economic loss on a crop.
 - [How to Identify a Plant or Weed](#) 3 minute video.
Take a picture of it. Then collect and press the entire plant and record where you collected it, the date and any key characteristics.
 - [Detecting Plant Diseases in the Lab](#) 3 minute video.
Describes how the Hermiston Agricultural Research and Extension Center examines plant disease samples to determine pathogens and plant diseases.
 - [Using A Plant Press](#) 4 minute video.
Preserving plant specimens -- best (if possible) to collect the entire plant specimen at peak production, including roots, flowers and potentially the seeds of the plant.

Leaf/tissue analysis and soil testing

Post harvest is the best time to do most soil and leaf testing for nutrient management planning. Nutrient levels are at their lowest and you can get the best information on what nutrients the recent crop might have had too much of, or too little.

- **Blueberries:** [OSU's Blueberry Nutrient \(and testing\) Guidelines](#) (2006)
- **Blackberries and Raspberries:** [OSU's Caneberry Nutrient \(and testing\) Guidelines](#) (2006)

- **Supplement to the guidelines linked above:** [Nutrient Management of Berry Crops in Oregon](#) (2013) from OSU Extension Berry Crops Specialist, Dr. Bernadine Strik
- **Video:** [Caneberry Nutrient Management](#) (37 minutes)
Dr. Bernadine Strik, 3/20/14, Raspberry & Blackberry Production Workshop, Woodburn, OR.

Resources for identifying diseases and insects

- **British Columbia:** [Instructions on how to submit blueberry tissue to the BC Ministry of Agriculture Plant Diagnostic lab for insect or disease testing.](#)
- **For submitting samples to the Oregon State Plant Clinic** [go here.](#)



Pest Alerts

Monitor & apply preventative insecticides as needed:

Spotted wing drosophila

SWD Resources

- [SWD I.D. Card](#) (UC Extension)
- [Spottedwing.org](#) Information from the 5 year SCRI regional project that just concluded. Cooperating organizations: OSU, WSU, Agriculture and Agri-Food Canada (AAFC), UC Davis, UC Berkeley, Peerbolt Crop Management & the USDA.
- [Spottedwing.org/SWD external links resources](#)

British Columbia

- [BC SWD Management](#) (Updated June 19, 2015) *It has 2015 spray options.*
- [Weekly Monitoring Reports](#) (Updated every Monday)
- [SWD information brochure in English](#) (Published June, 2015)
- [SWD information brochure in Punjabi](#) (Published June, 2015)
- [Online SWD Resources list from AAFC's Technical Working Group](#)

Oregon and Washington *(last updated 2/24/14)*

- [USpest.org SWD Extension Documents](#) *Many of Amy Dreves' generated SWD materials on managing and monitoring SWD.*
- Blueberries: [SWD pesticide options and information](#)
- Raspberries and blackberries: [SWD pesticide options and information](#)
- Strawberries: [SWD pesticide options and information](#)

Monitoring berries for SWD larvae in the field

[We have created a video of the larvae-checking method.](#) It's from 2010 but still pretty good.

- Put a sample of fruit to be tested in a gallon size sealable plastic bag.
- Pour in enough salt water solution to allow the fruit to float (solution is: 1 cup of salt per gallon of water). Mark bag with field code/date. Gently crush/break open fruit.
- For a quick check in the field after a designated period of time (at least 15 minutes) hold the baggie up to light. This helps to see the larvae in the solution.
- For a more thorough examination, after a designated period of time (at least 15 minutes), pour the fruit and salt solution out into a shallow tray and use a piece of wire mesh screen to hold the fruit down making it easier to separate the larvae from the fruit.

Pest management activities

Scout for and treat as needed: [Yellow rust](#), raspberries.

Scout for: [Aphids](#), blueberries.

- The action threshold for aphids in blueberries is very low in any area where [Scorch virus](#) is a concern.
- Aphids spread Scorch Virus and killing the aphids is the most effective way to prevent new infections.
- In areas where Scorch Virus is not a concern, the potential economic damage from aphids is much less and larger populations can be tolerated before management actions are taken.
- With Scorch Virus, infected bushes **do not** return to productivity and should be removed ASAP to limit the disease spread.

Scout for and evaluate if management action is needed: [Twospotted mites](#), raspberries.

Scout for and determine if management actions are needed: Root Weevil adults, all crops [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#).

Scout for: [Mummyberry](#), blueberries. [Mummyberry primer from MSU](#).

- *During harvest evaluate the level of mummyberry infections and the areas of the field that are infected.*
- Infected fruit is now easy to distinguish from healthy fruit.
- The infected fruit colors earlier, shrivels, whitens and drops from the bushes easily when disturbed.
- The inside of an infected berry will be filled with white fungal mycelium.
- Sort out and remove from field as much of the infected fruit as possible.
- Use this yearly mummyberry information to assess and plan next year's Mummyberry prevention program.



Additional, ongoing pest information

Diseases

- [Phytophthora Root Rot](#), raspberries.
- [Shock virus](#), blueberries.
- [Blackberry Rust](#), (Phragmidium Rust) Evergreen blackberries.

Insects/Mites

- [Azalea Bark Scale](#), blueberries.
- [Raspberry Beetle](#), northern raspberries.
- **Root Weevils**, strawberries and blueberries. [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#).
- [Blueberry Gall Midge](#), blueberries.
- **Mites in raspberries**: [Twospotted mites](#) and [Yellow mites](#).
- [Strawberry Crown Moth](#) southern strawberries

Crop Work Week 33

All crops

- Pay attention to new plantings of all berries for weeds, water, insects, diseases, and nutrient deficiencies.
- Maintain SWD fruit sampling, monitoring and management plan. ([blueberries](#), [raspberries](#), [blackberries](#), [strawberries](#))
- Weed management.
- Post-harvest—soil and leaf test for evaluation of nutrients.
 - [OSU's Blueberry Nutrient \(and testing\) Guidelines](#)
 - [OSU's Caneberry Nutrient \(and testing\) Guidelines](#).
- Post harvest—can treat for SWD management if field is adjacent to vulnerable fruit crop.
- Scout for Root Weevil adults [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#).
- Water management.

Blueberries

Harvest ongoing.

- [Bird management](#).
- Scout for [mummyberry](#) infected fruit.
- Stay on top of [aphid management](#) where scorch virus transmission is an issue.
- Scout for [leafroller larvae](#) and treat as needed.
- Scout for virus symptoms and send in samples for testing as needed ([Shock virus](#); [Scorch virus](#)).
- Scout for [winter moth/bruce spanworm](#) larvae.
- Scout for scale insects.
- Scout for weevil notching on leaves and for adult weevils.
- Scout for [azalea bark scale](#) in southern fields.
- Scout for [blueberry gall midge](#) damage.
- Can use pheromone traps to monitor for leafrollers.
- Scout for berry symptoms like green fruit botrytis, hail damage, mummyberry, etc.

Raspberries

Harvest finished.

- Scout for cane collapse symptoms & determine cause ([Phytophthora Root Rot](#), Verticillium, crown borers, overwatering, etc.)
- Scout for [yellow rust](#) and assess treatment options.
- Scout for [twospotted mites](#) and [yellow mites](#).
- Scout for virus symptoms and send in samples for testing as needed.
- Scout for [cane blight](#) and [cane botrytis](#) symptoms.
- (North) Scout for [raspberry beetle](#) feeding symptoms.
- Scout for [aphids](#) and treat as needed.

Blackberries

Late season variety harvest ongoing

- Scout for cane collapse symptoms & determine cause ([Phytophthora Root Rot](#), Verticillium, crown borers, overwatering, etc.)
- Scout for leafroller larvae and treat as needed to prevent fruit contaminant problems. ([orange Tortrix](#) and [oblique Banded](#))
- Can apply fungicides for [fruit/blossom rot](#).

- Scout for virus symptoms and send in samples for testing as needed.
- Scout for [cane and leaf rust](#).
- Watch for fruit molds and treat as needed.
- Scout for and treat as needed [blackberry rust](#) in Evergreen blackberries.
- Scout for two spotted spider mites and treat as needed in susceptible cultivars.
- Can apply horticultural oil for Redberry mite management at green fruit stage in susceptible cultivars.

Strawberries

Processed harvest (June bearers) finished throughout region. Fresh market harvest ongoing.

All strawberries

- Evaluate weak growing areas and check plants for weevil larvae, root rot and/or cold damage.
- (South) Can scout for [Strawberry Crown Moth Larvae](#) ..
- Scout for weevil adults and notching.

Processed market-June bearers—finished harvesting

- [Weed Control at strawberry renovation](#) (6/26/12, Michigan State Extension)
- Mow and treat immediately for [SCM/SWD](#) if needed.
- Mow and renovate 2-4 weeks after harvest unless pest pressure require mowing and treating sooner.
- Apply main fertilizer application as needed.

Fresh market-still harvesting

- Scout for [Lygus Bugs](#).
- Scout for fruit quality symptoms like mold ([Botrytis](#)), cat facing, [slug damage](#), anthracnose, etc.
- Can apply slug bait as needed.
- Scout for [Powdery Mildew](#) and treat as needed.
- Scout for [Twospotted Spider Mites](#) and predatory, beneficial mites.
- Scout for [aphids](#), lady beetles, aphid mummies (parasitized aphids), and other beneficial insects that feed on aphids.

Degree Day Updates

- [WSU Extension—Whatcom County](#)
- [Regional sites—Updated by Len Coop, OSU-IPPC](#) *click on the link, go to right hand column & click on the Degree day icon.*

Archived Small Fruit Updates

(For older Updates [go here.](#))

[31-SFU07-29-15](#)

[30-SFU07-22-15](#)

[29-SFU07-15-15](#)