

# 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.

September 2, 2015

Week 36

## Table of Contents

[Regional Reports](#)

[Industry News](#)

[Pest Update](#)

[Grower Resources](#)

[Crop Work](#)

[Events](#)

Oregon Strawberry Commission Workshop (8/18/15)

- [Strawberry Plasticulture Demonstration Video](#) (2 Minutes)
- [Plasticulture Strawberries Generate Higher Costs, Profits](#) (8/20, Capital Press)

WSU Red Raspberry Research

- [Removing leftover roots may improve new raspberry crop's health](#) (8/30, Growing Produce)

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

## National & International Berry Events

- **September 7-9 — 5<sup>th</sup> 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 — 6<sup>th</sup> Biennial Berry Health Benefits Symposium** ~ Madison, Wisconsin. [Go here](#) for all the details.

## Regional reports

**British Columbia, Fraser Valley**

[Go here](#) for the B.C. Blueberry Council's Blueberry IPM Report for 8/28. The BCBC wants to acknowledge the great job done by Carolyn Teasdale, Emily Carmichael and [ES Cropconsult](#) team for producing this weekly blueberry IPM report!

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](#)

## British Columbia, Fraser Valley (Monday 9/1)

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

- **Weather comments:** So... rain is now the story. The wind, oh well, trees fell, power outages created havoc, roads were closed, etc, but the rain is now looking to end our season prematurely, although we nearly got all crops in already. Back to school next week!
- **Fresh strawberries:** Day neutrals potting away, you could hear them sigh in relief over the rain. Some mould will crop up in about a week, however, with a protectant early and a follow up fungicide in a week, we should be covered.
- **Fresh raspberries:** Fall bearers taking a big hit on quality in the rain, however, where protected by high tunnels are doing well.
- **Blueberries:** Elliotts remnants still out there, hopefully they are still ok. Aurora, at least one or two more picks, this is gonna have a bad influence on the quality. SWD numbers again very high. For all the heat and drought, not too bad a season... Our growers adapted and ran full out and so did the packers and processors. Everyone deserves the earlier end of the season!
- **Misc crops:** Hops getting close to ripeness. Grapes are delicious for eating and wine already.

## Western Washington, Whatcom County (Tuesday 9/2)

- **Weather comments:** Wind in Whatcom hit right at 60 MPH gusts. Fruit that was left got knocked around and much hit the ground. As of 12:00 PM 9/1/15, power still out north of town (Lynden).
- **All berry crops:** No one harvesting that I am aware. Even day neutral strawberries are winding down. Finally turned off irrigation! Back to actual farm management! Mowing weeds....applying burn down...prepping for fall herbicides and fall fungicides. Looking forward to a day off! Can anyone remember actually not laboring on labor day???? Maybe the first time in many moons! Salmon are running....go wet a line!

## Western Washington (Monday 9/1)

From [Lisa Wasko DeVetter](#), Berry crops horticulturist, Washington State University, Mt Vernon NWREC, [Go here](#) for the WSU Small Fruit Horticulture website.

- **Weather comments:** The weekend in western Washington was interesting. Maximum gust speeds in Mount Vernon were 35.7 mph and we received about 0.9 inches of rain this weekend. My [WSU AgWeatherNet](#) records show the Lynden area got less with about a half an inch total accumulated between Aug. 28-29. More rain is expected this week.
- **Fresh strawberries:** Growers are still harvesting day-neutral strawberries in western Washington. I've seen some cat-facing, likely due to Lygus feeding during flowering. With the rains we have and will continue to receive this week, fruit quality will likely suffer.
- **Disease/Insect Pest comments:**
  - (This is in response to other comments directly below in the pest update) I've also been getting reports of increased [Rose stem girdler](#) ([Agrilus aurichalceus](#)) damage on caneberries grown here in western Washington.



Rabbiteye blueberries, Willamette Valley

- [Verticillium](#) seems to be worse this year for strawberry growers on black plastic, which may be aggravated by the warmer conditions we've had this year.

### Eastern Washington (Tuesday, 9/2)

- **Blueberries:** Cooling off over here but still LOTS of SWD in the yellow sticky traps. Keep the water going. Leaves not turning color yet like up north but should soon, be ready for copper sprays I'll bet we have an early Fall

### Oregon/SW Washington (Tuesday, 9/2)

- **Weather comments:** High winds and about an inch of rain over the weekend. It remains very fall-like with a few showers, clouds and highs in the 70s. Hope the guys with high tunnels were able to get them reeled in in time. We had April in February this year guess having October in late August seems about right. Good to the fields wet down.
- **Blueberries:** There are still a few Aurora fields being picked. Probably a little Elliott and Rabbiteyes coming in, too. When we warm up again, these plants are going to be very confused about just what season they're in.

## Industry news/resources

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### 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 35](#) (8/31)
- [USDA Market News \(Fruits & Vegetables\)](#)

### Magazine/website compilations

- **The Packer:** [blueberries](#), [blackberries](#), [raspberries](#), [strawberries](#).
- **Growing Produce:** [recent berry articles](#).
- **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: (8/20) XIth International Rubus and Ribes Symposium puts the Carolinas on the map!** *Reports on issues in blackberries and raspberries from the Southeast.*

### Business

- [Five generations have kept Weeks Berry Nursery going](#) (8/21, Capital Press)

### International

- China: [Chilean government signs accord with Alibaba](#) (9/1, Fresh Fruit Portal)
- Peru: [Peruvian blueberry access to Canada 'imminent'](#) (8/31, Fresh Fruit Portal)

## Northwest Berry Pest Update

A few unusual/new occurrences this season

- **Blueberry Diseases, [Silverleaf](#)** (*Chondrostereum purpureum*) In addition to the Draper cultivar, which has shown symptoms in a few fields, Silverleaf has also been identified in an old Berkeley field in Oregon. Implications from this: 1) It's not limited to just Draper. 2) It isn't completely new to this region. This is a field the grower had been trying to diagnose the cause of the problem for quite a few years. 3) Given the many observations of the disease in Draper, it appears that this cultivar is much more susceptible than others.



Silver Leaf disease symptoms—Draper blueberry field, Willamette valley 5/22/15. Photos by Tom Peerbolt

- **Caneberry Insect Pests, [Rose stem girdler](#)** (*Agrilus aurichalceus*) This is a beetle that inserts its eggs into blackberry and raspberry primocanes in the spring. The larva feeds on the tissue right under the bark girdling the cane. We've found it the last couple of years at low levels in blackberry (I've got it in the Columbia Star in front of my house). This year it hit at least one Black Diamond field fairly heavy—definitely economic. Can go unnoticed until the canes are trained and then workers could cut them out and you'd never know why cane numbers are going down. Very distinctive swelling of the cane where it's under the bark. I've attached a couple photo's.



Rose Stem Girdler symptoms—Black Diamond blackberry field, Willamette Valley 8/12/15. Photos by Tom Peerbolt

- **Strawberry Diseases [Charcoal rot](#)** (*Macrophomina phaseolina*). This disease has been an increasing problem for the last few years in California. It's now been found in the Northwest. Management is very difficult—kind of like Verticillium.



Charcoal rot symptoms—Photos from the [California Strawberry Commission Management Guide](#)

# Grower Resources ---- Week 36

## 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.](#)



Photo by T. Peerbolt

## Pest Management Activities

**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.

**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 36

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### All crops

- Maintain SWD fruit sampling, monitoring and management plan in any fields still harvesting.
- Weed management.
- Post-harvest—soil and leaf test for evaluation of nutrients.
  - o [OSU's Blueberry Nutrient \(and testing\) Guidelines](#)
  - o [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 in a few fields.*

- [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

#### *Processed 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.

#### *For late season, fresh market*

- Scout for weevils and treat as needed ( [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#)).
- (North) Scout for [Raspberry Fruitworm](#) feeding symptoms.
- Scout for virus symptoms and send in samples for testing as needed ([RBDV](#), [TRsV](#))
- Scout for [fruit mold](#) and treat as needed.

- Scout for [Yellow Rust](#) and assess treatment options.
- Scout for [Two-spotted Mites](#), [Yellow mites](#) and treat as needed.
- Scout for [aphids](#) and treat as needed.
- Scout for [leafroller larvae](#).

## 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 thrips.
- 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.



Liming in SW Washington, photo by T. Peerbolt

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

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### 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](mailto: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](mailto: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**
- **September 16 Oregon Raspberry and Blackberry Commission** Email Contact: [berries@oregon-berries.com](mailto:berries@oregon-berries.com)
- **September 23 Oregon Strawberry Commission** Email Contact: [berries@oregon-berries.com](mailto:berries@oregon-berries.com)

### Regional Berry Events

- **December 2-4 — Washington Small Fruit Conference** ~ at the NW Washington Fairgrounds, Lynden, WA. [Go here](#) for more information and to register.
- **January 25 — Oregon Blueberry Conference** ~ at the Red Lion on the River, Jantzen Beach, Portland. Email Contact: [jenny@ostlund.com](mailto:jenny@ostlund.com)

### National & International Berry Events

- **September 7-9 — 5<sup>th</sup> Annual International Blueberry Organization Summit** ~ Coffs Harbor, Australia. [Go here](#) for meeting information.
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### Archived Small Fruit Updates

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

[35-SFU08-26-15](#)

[34-SFU08-20-15](#)

[33-SFU08-12-15](#)