

# 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 27, 2013

Week 35

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## Recent SWD articles/news

- [WSU Entomologist, Lynell Tanigoshi, 6 minute video on SWD & insecticide resistance management](#) (WSU Extension)
- (Michigan blueberries) [What are we learning about Spotted Wing Drosophila management in berries this season?](#) (8/26, MSU Extension)
- (Michigan) [Berry growers face a challenging time managing SWD](#) (8/19, Fruit Grower News)

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

## Pesticide label changes and pollinators

We're beginning to see label changes/advisories coming from the EPA in response to the potential impacts pesticides have on pollinators.

These are scientifically complex and politically charged issues and the actions taken are going to directly impact the way we manage our crops, our pests and our pollinators. We need to get as much industry/grower expertise as possible to our regulators, researchers and political leaders. They'll all need it to make responsible decisions.

Insecticides impacted right now are all the foliar formulations of neonicotinoids--clothianidin, dinotefuran, imidacloprid and thiamethoxam.

Click on the following links for more information:

[EPA requires new pollinator protection label](#) (8/21, California Ag Today)

[EPA debuts bee-protective pesticide labels, enviros demand more](#) (8/15, Environmental News Service)

## 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

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

## National

[North American Blueberry Council](#)

[New pesticide labels to better protect bees](#) (8/16, Ag Professional)  
[Pollinator Protection](#) (EPA Website)  
[The new Pollinator Protection Box](#) (Graphic and explanation from EPA)

## Regional crop information

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### **Armillaria Root Rot in blueberries** (photos below)

Mark Sweeney (BC Ministry of Ag) and Chuck Mouritzen (Southwest Crop Consulting) report a “dramatic increase in the incidence of Armillaria root rot in blueberry fields in BC.”

According to Mark: “Symptoms are quite dramatic at this time of the year –

- Individual plants in otherwise healthy fields look severely nutrient deficient, often red or yellow leaf colouration.
- If you scrape under the bark at the crown you will see white mycelia growth and the black root-like structures (rhizomorphs) around the crown and surface soil.
- The following year these plants will be dead!
- The rhizomorphs will grow down the row and infect adjacent plants.
- In most situations the disease seems to be moving quite slowly, but growers should carefully remove and destroy infected plants to limit spread.
- There are no fungicidal control options, but fumigation prior to replanting affected sections is a possible option.”
- One would expect infections mostly in fields that have had alternate hosts like raspberries or Christmas trees planted previously.
- However, many of the affected fields have been in corn, grass or vegetables for decades so the disease must be coming in via some other path.
- We are curious if other production areas are seeing more Armillaria.”

If you have (or suspect you have) this disease present in your field please email Mark ([Mark.Sweeney@gems6.gov.bc.ca](mailto:Mark.Sweeney@gems6.gov.bc.ca)) or The Small Fruit Update ([info@peerbolt.com](mailto:info@peerbolt.com)) so we can better assess the overall regional distribution of the problem.

Links for more information: [Click here](#) (BC Berry Production Guide) [Click here](#) (eXtension).



Typical Armillaria symptoms (left above) // White mycelia growth on base-bark scraped off (right above) // Rhizomorphs (on next page)

All photos from Mark Sweeney



### British Columbia, Fraser Valley (Saturday, 8/24)

- **Blueberries:** We're into second pick on Liberty and well into pick on Elliott. Softness somewhat of an issue in some Elliotts as a few growers are struggling to pick quickly enough. Continued warm weather (was above 30C a couple days this week!) is really hastening ripening. Bluecrop pick is winding down and finished on a lot of farms. Aphids showing up in big numbers in some fields and not at all in others, so there is a requirement for control on an as needed basis where warranted.

**Note on Armillaria:** Spent the afternoon yesterday with a grower rouging out *Armillaria* infected plants in a 2 year old Duke planting. As Mark says, there is some reason for concern as the frequency of infection "discovery" here is increasing. Right now we're trying to identify issues in the field and deal with infected plants as well as partition off the infected areas in the row. Most of the problems I have with infected plantings are relatively young fields 2-8 years old in the field. The main point for now is that new fields should really be evaluated before planting as far as past history of vegetation. And I would certainly recommend fumigation on old raspberry land, even though it may not be 100% effective as a control for *Armillaria*.

## Grower resources

[Brown Marmorated Stink Bug in Oregon](#) (OSU website) Excellent resource site for BMSB information and the place to report any sightings of this potential berry pest.

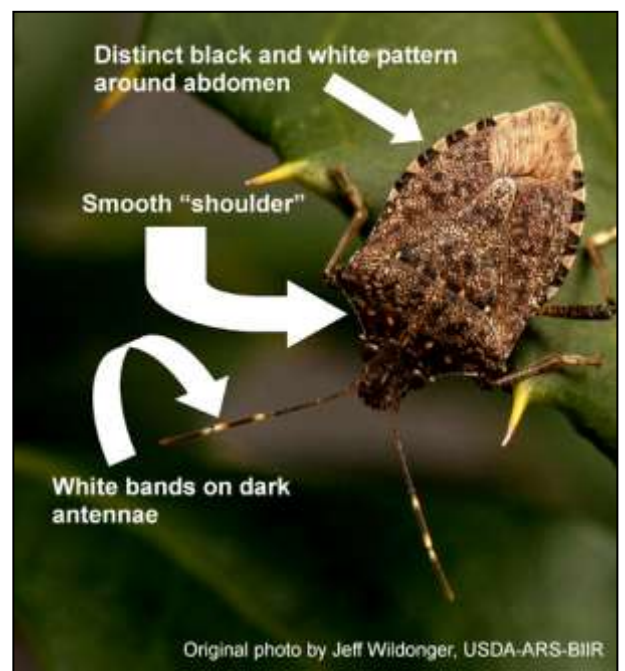
### [Stop BMSB website](#)

Site of the USDA SCRI project on BSMB. Everything you always wanted to know about...

### [BMSB Video Series](#)

How to I.D. and what type of damage to look for

- Check out Part 8: "Host plants and damage in the Pacific Northwest"



## 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 or too little of.

- **Blueberries:** Leaf/tissue testing and pH monitoring are most critical. Complete soil tests don't correlate well with plant needs as leaf/tissue tests. [Click here](#) to view OSU's Blueberry Nutrient (and testing) Guidelines.
- **Blackberries and Raspberries:** While annual soil testing has been the industry norm, Oregon State's updated nutritional guide recommends annual leaf/tissue testing, with soil tests done just every few years. [Click here](#) to view OSU's Caneberry Nutrient (and testing) Guidelines.

**New overview and supplement to the OSU nutrient management guides.** From Bernadine Strik, OSU Berry Specialist: "Please share this with growers. I think it will be handy having this info all in one relatively short (6 page) handout:

- I've added new information on time of sampling in some of the new crops.
- Also, amount of nutrients removed in fruit at harvest and when pruning blueberries.
- Please note that I decided not to do this as an official OSU Extension publication at this time.
- As we get more info in on tissue testing research in blueberry and blackberry and nutrient removal this information will be added and used to update our existing nutrient management guides."
- [Click here](#) for this supplement. The full nutrient guides are linked below.

## 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** [click here.](#)

## Maximum Residue Levels (MRL's) for exported berries

The following lists cover MRLs for the US, Canada, Japan, Korea and Taiwan.

- [Blueberries](#) (Updated March 11, 2013)
- [Caneberries](#) (Updated March 11, 2013)
- [Strawberries](#) (Updated February 15, 2013)

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## Spotted Wing Drosophila resources for 8-27-13 Week 35

### **Regional grower warning—Continued high risk of economic crop damage to berry crops in Oregon, Washington and British Columbia**

The risk of economic damage from this insect is higher than in any of the previous three seasons we have dealt with it.

## New Information relevant to SWD management

### New Oregon SWD label

This label can be used immediately.

- New Oregon 24 C Malathion 8 Aquamul special use label: [Click here.](#)
- Explanatory letter: [Click here.](#)

### Insecticide Rainfastness

[Rainfast characteristics of fruit crop insecticides](#) (Originally posted 6/3/13, MSU Extension)



## Monitoring berries for SWD larvae

**For scouts/field checking** ([We have created a video of this larvae-checking method.](#)):

1. Collect a sample of fruit to be tested (caneberries/blueberries: 50 per sample)
2. Put fruit in a gallon size sealable plastic bag.
3. Pour in enough of the salt water solution to allow the fruit to float (solution is: 1 cup of salt per gallon of water).
4. Mark bag with field code/date.
5. 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.
6. 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.

**For processors or fruit handling stations:**

1. Collect a two pound sample of fruit to be tested.
2. Put the sample into a shallow tray and cover with the salt water solution (1 cup of salt per gallon of water).
3. After a designated period of time (at least 15 minutes), use a piece of wire mesh screen to hold the fruit down to make it easier to separate the larvae from the fruit.

## SWD information websites

[Peerbolt Crop Management](#)

[Oregon State Univ.](#)

[B.C. Ministry of Ag.](#)

[WSU Westside](#)

[WSU Eastside](#)

[WSU Extension SWD degree day model for Whatcom and Skagit Counties](#)

## SWD management material resources

### Oregon and Washington

- **Blueberries:** [SWD pesticide options and information](#) updated 4/15/13
- **Raspberries and blackberries:** [SWD pesticide options and information](#) updated 4/15/13
- **Strawberries:** [SWD pesticide options and information](#) updated 4/15/13

### British Columbia

- [Spotted Wing Drosophila \(SWD\) management in B.C. berry crops](#) updated 7/3/12

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## Industry news/resources

### Newsletters/ Berry reports

- [BC Blueberry IPM Newsletter](#) (8/23) Weekly by Carolyn Teasdale, [ES Cropconsult](#). Sponsored by the BC Blueberry Council.
- [New Jersey Blueberry Bulletin](#) (8/13) Weekly newsletter by Gary Pavlis, Rutgers blueberry agent.
- [Michigan State Extension Blueberry News](#) (8/26)
- [The Source](#) (8/26) Marketing report from The Produce News.
- [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.

### Magazine compilations

- The Packer: [blueberries](#), [blackberries](#), [raspberries](#), [strawberries](#). Recent stories and fresh market pricing for the various berries from The Packer.
- Growing Produce: [recent berry articles](#).

## Berry research blogs

- [Strawberries and Caneberries](#) by Mark Bolda, UC Davis Berry Extension Agent. **Recent entry: 8/17—Raspberry crown borer in raspberry** *Reports on recent insect and disease research and observations in California.*
- [Team Rubus](#) by Gina Fernandez, North Carolina State Small Fruit Specialist. **Recent entry: 8/15—Late summer fertility in blackberry** *Reports on issues in blackberries and raspberries from the Southeast.*

## Immigration & Labor

- [Who will pick our produce?](#) (8/26, Supermarket Guru)
- [Labor costs drive up Washington farm spending](#) (8/20, Capital Press)
- [Lack of seasonal workers puts Michigan farmers in a pickle](#) (8/26, The Detroit News)

## Politics & Ag

- [Immigration bill generating little heat in town halls](#) (8/25, USA Today)
- [Why immigration reform is in trouble](#) (8/27, The Washington Post)

## Regulatory Issues

- [Food-safety rule focuses on water quality](#) (8/21, Ag Alert)
- [Food safety rules: Rushed deadlines will lead to disaster](#) (8/20, The Heritage Foundation)

## Food Safety

- [Food firms need cleaner hands](#) (8/21, Food Production Daily)

## Marketing

- [Strawberry sense and sensibility](#) (8/23, The Packer)

## International

- [Hortifrut and Vitalberry finalize merger](#) (8/26, Fresh Fruit Portal)
- [Curry & Co. adds new management for South American operations](#) (8/22, The Packer)
- [Mexico invests in doubling strawberry plantations](#) (8/21, Fresh Fruit Portal)

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## Event Calendar

For more comprehensive event calendar, [click here](#).

- **September 11 — Washington Red Raspberry Commission** ~ 1 pm, Bellewood Acres, Lynden, WA. Call 360-354-8767 or [email Henry Bierlink](#) for more information.
- **September 24 — Oregon Blueberry Commission** ~ 12 pm, at Chemeketa Events at Winema, Building 48, Room 210.
- **September 24 — Oregon Strawberry Commission** 6 pm [Langdon Farms Golf Club](#). Call 541-758-4043 or [email](#) Phillip Gutt for more information.
- **October 2-4 — US Highbush Blueberry Council, Fall Meeting** ~ in Wilmington, NC. Details and registration coming soon.
- **October 23 — Washington Red Raspberry Commission** ~ in Lynden, WA. Call 360-354-8767 or [email Henry Bierlink](#) for more information.

## Crop work/Pest management activities **Week 35**

### All crops

- Pay attention to new plantings of all berries for weeds, water, insects, diseases, and nutrient deficiencies.
- Maintain SWD 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 if field is adjacent to vulnerable fruit crop.
- Scout for Root Weevil adults [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#).



## Blueberries

### *Harvest ongoing*

- Scout for leaf symptoms—poor growth, nutrient deficiencies, water stress, herbicide damage, etc & determine if actions are needed.
- Maintain [bird damage management](#).
- Scout for weevil notching on leaves and for adult weevils.
- Scout for [leafroller larvae](#) feeding.
- Stay on top of [Aphids/Scorch Virus](#) management where Scorch virus transmission is an issue.
- Scout for virus symptoms and send in samples for testing as needed. ([Scorch](#), [Shock](#)).
- Scout for [Blueberry Gall Midge](#) damage.
- 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.)

#### *Post harvest*

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

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

- Scout for weevils and treat as needed ( [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#)).
- 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

### *Mid season processed harvest finished/Late ripening variety harvest ongoing*

- Scout for leafroller larvae ([O.T.](#), [OBLR](#)) and treat as needed to prevent fruit contaminant problems.
- Scout for virus symptoms and send in samples for testing as needed. ([RBDV](#))
- Scout for and treat as needed [Blackberry Rust](#) in Evergreen blackberries.
- Scout for [Twospotted Spider Mites](#) and treat as needed in susceptible cultivars.
- Scout for [Cane and Leaf Rust](#).
- Scout for [aphids](#) and treat as needed.
- Scout for cane collapse symptoms & determine cause ( [Phytophthora Root Rot](#), Verticillium, crown borers, overwatering, etc.)

## 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 damage symptoms like 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.
- Scout for fruit quality issues such as mold ([Botrytis](#)).

## Archived Small Fruit Updates

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*(For older Updates [click here](#).)*

[34-SFU08-20-13](#)    [33-SFU08-13-13](#)    [SFU08-06-13](#)

This document is a guide and not intended as a recommendation or endorsement.

Consult with your supplier, field representative, or pest consultant.

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