

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.

May 6, 2015

Week 19

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- [Trends and Economics of Washington State Organic Blueberry Production](#) (WSU Extension Fact Sheet, April, 2015)
- [Blueberry Research Focuses on Gentler Methods of Harvesting & Processing the Tiny Fruit](#) (4/30, Phys.org) [Go here](#) for a video showing the sensor being tested on a blueberry line.

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

General field observations (Willamette Valley)

- **Weeds!** Can really tell the difference now in weed management (or mismanagement) programs. From very clean to thigh-high grasses to herbicide damage to big thistle patches.
- **Vole activity** becoming much more prominent.
- **Irrigation/field moisture** differences are also becoming obvious. Some fields are showing water stress issues (lack of new growth flushes, nutrient deficiency symptoms, even some fruit drop) while others are taking off, sizing a lot of fruit, and very vigorous.
- **Nutrient deficiency symptoms.** Now is the time in blueberries and strawberries when fruit is sizing, new growth flushes are pushing, temperatures are rising, soil moisture levels are decreasing... and plants are requiring more water and nutrients. If you've got root nutrient uptake problems you're going to see them now. Some possible causes of these symptoms:
 - Especially in blueberries-- pH is too high or too low.
 - Soil is either too dry or too wet.
 - Root disease problem, like phytophthora.
 - An actual soil nutrient deficiency.
- **In blueberries**, we've got the berry numbers and pollination to make for a very good sized crop. Make sure this heavy crop load has the water and nutrition it needs to size up!

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](#)

The 2015 SWD threat potential remains very high at this point! Know your fields, know your options; stay informed.

Tom Peerbolt, SFU Editor

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

Regional reports



Week 19, Reka, British Columbia



Week 19, Duke, British Columbia



Week 19, Bluecrop, British Columbia

Photos by Jason Smith

British Columbia, Fraser Valley (Monday, 5/4)

- **Blueberries:** It's hard to pin this bloom period down. Dukes should be wrapping up but many fields continue to have considerable bloom left to open. Liberty is ahead of Draper and lots of Elliotts are running in line with Bluecrop. Should be an interesting pick. And that could start before the last week of June in some areas if May supplies the right weather. We could use some consistent moderately warm weather to take care of this flowering period and the pollination required. Bees have been incredible though, taking advantage of good weather when it happens. Sunday was an amazing day for bees with tremendous numbers working each plant. Hail damage a week ago appears to have been minimal in effect. However, in some fields leaves took a real beating which may set some development back. Considerable nitrogen down last week and into this week. So a little precipitation may get some of these plants really moving. I'm still a little concerned about leaf to fruit balance out there. It appears that there has been some winter leaf bud mortality.
- **Raspberries:** Lateral development has come a long way the last week or so. Blossom bud separation occurring in Chemainus, Saanich and Rudi with some near open flowers appearing. Weak Meeker laterals are producing blossom buds near opening as well. Meekers have gotten a lot better but there are still a considerable numbers of fields with weak winter damaged plants and some with a terrific amount of dead bud and cane. This variety could be well off last year's performance level. Weevil pressure is still evident in many fields. Mite numbers and eggs are increasing, so be prepared for possible control measures in the next couple weeks. Nitrogen going on last week and this week.

British Columbia, Fraser Valley (Tuesday, 5/5)

- **Blueberries:** Bees have been working vigorously even at temps lower than they'd normally be out. Many times I've seen multiple bees working on different clusters on the same branch. Still a lot of variability between fields for same variety. Some Dukes just finishing pollination while others have berries that have begun sizing. Reka is basically finished bloom as well. Bluecrop is in the meat of it if not a bit past 50-60% in some fields. Elliot is at a similar stage with some fields just a bit behind Bluecrop. Things looking good overall. Expecting a day or so of cooler wet weather and then back to the sunshine. Hoping the plants will begin to push a lot of growth over the next few weeks. A bit concerned as there was 30% of normal snow pack and our overall moisture has been down. Some growers could have irrigation challenges come mid-August.

British Columbia, Fraser Valley (Friday, 5/1)

Dry March has made for excellent field conditions for work, even with tractor and sprayer tanks. We maintain our early season, no cold setbacks yet.

- **Haskaps:** Ripe, very good fruit set, no major issues.
- **Blueberries:** So far decent fruit set, last week's hail had a slight impact, but very spotty, 100 m over no effect. The corollas are dropping fast now, lots of honey bees and bumble bees seen working furiously. Been relatively dry.
- **Raspberries:** Laterals elongating and flowers visible. Should move quickly now with it dry and warm inland.
- **Strawberries:** Set for a really early start, but flowering is spotty and the vigor in plants is not quite there yet. Perhaps the warm temps will help.
- **Cranberries:** Buds are now growing out. So far they look great but frost protection is on-going.
- **Goji:** First fruit has set.

Northern Washington, Whatcom County (Monday, 5/4)

- **Blueberries:** New Draper blooms are much bigger than the previous and bees are happy to work there. Things are moving fast in raspberries and blueberries. Harvest is going to be very spread out in blues as bloom just keeps on coming

Eastern Washington

35-84F (1.5-29C) over here, frost risk and heat stress in the same day seems crazy (Monday, 5-4)

- **Blueberries:** (Tuesday, 5/5) In eastern Washington, growing conditions have been very favorable for blueberry production with seasonal to above seasonable temperatures. Bloom is largely over for most varieties. First harvest is close to one month away in Dukes. One troubling issue is that a significant amount of blueberries are grown in the Roza Irrigation District and it was just announced that they will

receive only 30% of their allotment of irrigation water. Growers are scrambling to access well water. The partial water allotment is not expected to impact this year's crop, but could impact the 2016 crop.

Western Oregon, Willamette Valley

In 2013 on May 2-6 the Willamette Valley had high temperatures of 80, 82, 83, 85 and 80. In 2014 on April 30th and May 1st we also had highs in the mid to upper 80's. Both of those events created a big load of blossoms coming out and led to a concentrated Duke harvest. This year there's no such warm up and we're looking at what appears to be a harvest in all three major crops that's very spread out.

- **Blueberries:** (Monday, 5/4) Duke bloom is pretty well finished. We've got great fruit set. Definitely have the berry numbers to have a big year. Just need to work on maximizing the sizing of all these berries. Irrigation is going on a lot of fields. Dukes harvest starts are going to be spread out. Some warmer spots could start as early as June 1st-3rd? Later ones probably 10-12? Still, probably be spotty at the beginning and guys might wait to start if they can or take a small clean up/pick off to get into larger quantities. With Elliotts and Aurora both far ahead of their development of the last couple of years there's a very good chance that the usual late season fruit will also be very early.
- **Strawberries, Day neutral:** (Monday, 5/4) Albion strawberries have started harvest.
- **Strawberries, June bearing:** (Monday, 5/4) Totems will start around May 20th.
- **Blackberries:** (Tuesday, 5/5) Marion bloom is moving along but slowly, around 10%. Black Diamonds still blooming, not sure they will ever get done, started April 15 and looks like could go on for another 2 weeks. Kotata 50% bloom or more and Columbia Star 30% bloom. This year will definitely test the theory that spread out bloom means spread out harvest. So far been great weather for bees, at least in the afternoons they are all over the bloom. New plantings going in and fungicides being applied, nice conditions for both



Classified -- Job offering

If you have job openings or services that we might be able to help get the word out on, let me know (tom@peerbolt.com). This is free.

Field Representative--Scenic Fruit Company

- The Field Representative operates as a liaison between the company and the grower to produce the highest yield and quality of raw product possible to meet production goals. The individual develops transportation schedules with interaction between plant and field personnel. This position works very independently at the highest level, and is responsible for the most time-sensitive crops. [Go here](#) for a full job description. **Contact Person:** [Deb Wilson](#), HR Manager. Office: 503 663-3434; Cell: 503 803-0920.

Blueberry Bud Development Comparison for the Western Willamette Valley

Protocols for these photos: 1) Each Friday I take 5-7 cuttings from the same fields in the NW Willamette Valley. 2) Later in the day I look over the cuttings and choose what seems the most 'representative' (not the most advanced or the least advanced). I'm aiming for the development stage that best represents the fruit that would be the first harvested. **We continue to be well ahead in development over the last two years.**

Northwestern Willamette Valley

Top – 5/1/15

Middle – 5/2/14

Bottom – 5/2/13

Patriot

Bluejay

Draper

Duke

Liberty

Aurora

Elliott



Patriot

Bluejay

Draper

Duke

Liberty

Aurora

Elliott

Industry news/resources

Newsletters/ berry reports

- [BC Blueberry Council IPM Report](#) May 1, 2015
- [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.
- [The Source](#) (4/29) Produce marketing news from Pro*Act.

Magazine/website compilations

- The Packer: [blueberries](#), [blackberries](#), [raspberries](#), [strawberries](#).

- **Growing Produce:** [recent berry articles](#).
- **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 (4/24): Farm Call: Alternative fumigant use and nutritional deficiency?** *Reports on recent insect and disease research and observations in California.*
- [Team Rubus](#) by Gina Fernandez, North Carolina State Small Fruit Specialist. **Recent entry (4/14): Exciting potential program...A National Research and Promotion Program for Blackberries** *Reports on issues in blackberries and raspberries from the Southeast.*

Business

- [World tractor market drops nearly 30% for U.S. sales in 2014](#) (5/1, Western Farmer-Stockman)
- [Monsanto reportedly approaching Syngenta about takeover](#) (5/1, Ag Professional)

The West

- Oregon: [Curry & Co. anticipates early Oregon blueberries](#) (4/29, The Packer)
- California: [Bushberries to follow strawberries' lead](#) (4/29, The Packer)
- California: [California growers expect fast start for most fruits](#) (4/29, The Packer)

International

Australia

- [New techniques at play to make blueberry quality more science, less 'art'](#) (5/4, Fresh Fruit Portal)



Bees in blackberry blooms
Photo by Tom Peerbolt

Week 19 Grower Resources

- [How to maintain optimum soil pH in blueberries](#) (4/30, The Packer)
- [How to create fast growth for new blueberry plantings](#) (4/30, The Packer)
- [Getting right to the core of nutrient management for berry crops](#) (4/29, The Packer)
- [Suggestions to reduce spray drift](#) (5/4, Ag Professional)

Scouting Field Notes

Some informal notes of what we've been seeing & doing in the fields this week. All of this applies only to fields we're seeing. Don't expect it to be representative of what's happening in any other field.

Spotted Wing Drosophila

- *The trap numbers remain the highest recorded when compared to the five previous seasons since we started SWD monitoring.*
- *Still seem to be picking up the overwintering flies as we wait for signs that these females have found the first new noncrop (or crop hosts). So most trap counts are either declining a bit or increasing slightly.*
- *Still—a lot of females with viable eggs are searching for host fruits right now.*
- *With strawberries coloring and starting harvest we've begun fruit sampling. So far no larvae have been recovered.*

Blueberries

- *Duke bloom is finishing.*
- *A few winter moth and leafroller larvae found.*
- *Mummyberry flagging is still prominent in some fields.*

Strawberries

- *Started fruit sampling for SWD larvae in Albions. None picked up but most fields checked had a cleanup insecticide applied before harvest.*
- *We've got some very high aphid counts in fields. This warm/humid weather encourages them. There are signs of parasitism but not very high. Right now the aphids are out-producing the parasitoids.*
- *First harvests of Albion this past week. Nice looking fruit. Main damage is from slug feeding.*
- *Some cat-facing in Hoods. Maybe 10-20%. Causes? Probably environmental--cold damage to blooms, hail...*
- *No strawberry crown moth adults being picked up yet in pheromone traps.*

Raspberries

- *Bloom is getting started.*
- *Rust is changing spore stages but still at pretty low levels.*
- *Some weevil adults are being picked up on the beating trays.*

Blackberries

- *Obsidians are about 50% bloom.*
- *Cane and leaf rust is heavy this year in Marion and Columbia Star in particular.*



Green Immigrant Weevil on blueberry leaf Photo by Tom Peerbolt

This weevil has been showing up increasingly in northwest blueberries. Unlike our other weevils, it flies during the day and is easily observed/caught. Leaf notching is prominent. Unsure of how much actual economic damage it's causing if any. We've seen it most in new fields where no insecticides have been applied.

Pest Alerts

Blueberry Ripe Fruit Diseases—Time now to prevent

Time for preventative fungicide applications: Alternaria Fruit Rot

As blueberry bloom starts to finish, it's time to consider whether you need to prevent Alternaria and Anthracnose problems from showing up in the fruit. Alternaria can infect the fruit beginning at the end of bloom and throughout the

fruit development stage, up until harvest. Infections remain latent until the fruit ripens. Infected fruits exhibit a shriveling or caving-in of the side of the berry and become watery in storage.



Photos by Caroline Teasdale

Time for preventative fungicide applications: [Anthracnose Ripe Rot](#)

If you've had problems with Anthracnose, prevention of a reoccurrence begins at petal fall. Symptoms: First, blighting of shoot tips; then, a few flowers turn brown or black. Leaf spots, when they occur, are large or small and roughly circular. As infected berries ripen, the flower end may soften and pucker. Under warm and rainy conditions, salmon-colored spore masses form on infected berries. After harvest, spore masses form rapidly on infected fruit when in cellophane-covered baskets or in plastic clamshell packs.



Photos by Caroline Teasdale

Time to scout for & treat if needed: [Yellow Rust Raspberries](#)



Stages of Yellow Rust (from left) spermatangia, aecia, uredinia: It has not yet reached the uredinia stage.
(Middle photo by Carolyn Teasdale, others by Tom Peerbolt)

- Yellow rust is now moving through its spore stages from yellow/orange colored 'blisters' (spermagonia) on the top surface of leaves to a very visible, almost day-glow orange/yellow spore stage (aecia) and, in southern regional fields, the fourth spore stage (uredinia).
- This fourth spore stage (uredinia) appears later in the season as yellow 'dust' on the bottom of leaves. This last stage is the one that multiplies quickly & can quickly defoliate canes if left untreated.
- Evaluate disease incidence and stage to determine whether (& when) fungicide applications are warranted.

Time to Scout for: [Scorch virus](#) Blueberries

- Symptoms are becoming visible.
- This disease is vectored aphids.
- *There is no treatment or cure. Infected bushes never return to productivity & should be removed ASAP.*
- **The BC Blueberry Council is accepting samples for the free Scorch & Shock testing program.** For more information call Karina Sakalauskas, Research Coordinator for the BC Blueberry Council (604) 613 2133 or [click here](#) to email her.

Time to scout for: [Shock virus](#) Blueberries.

- Symptoms are visible in many area fields.
- This disease is vectored by pollinators.
- There is no treatment or cure.
- Infected bushes generally display symptoms for one year and then return to productivity.

Time to scout for and evaluate if management action is needed:

[Powdery Mildew](#) southern strawberries.

- Dry, warm, humid conditions favor powdery mildew in strawberries. *(Photos by Tom Peerbolt).*



Time to scout for and prevent: [Mummyberry](#), blueberries.

Fields at risk should have a protective fungicide on the susceptible tissue at this time to minimize infections.

- [Managing mummy berry shoot strike infections](#) (MSU Extension, 5/3/13) Great charts on effectiveness of fungicide choices and on weather variables that favor infections.
- [Mummyberry primer from MSU.](#)

Time to scout for and evaluate if management action is needed: [Yellow mites](#), raspberries

- This early season mite is smaller and paler than two-spotted mite and has less webbing.

Time to scout for and evaluate if management action is needed: [Blackberry Rust](#) (Phragmidium Rust) Evergreen blackberries

- This disease is of economic threat to only to Evergreen blackberries where it can be devastating. *There are reports of it being present in fields at this time.* Treatment is recommended. Rally (myclobutanil) is particularly effective.

Ongoing Pest Information

- **Scout for:** [Azalea Bark Scale](#), **blueberries**. This scale's telltale bright white egg sacs on the lower branches of infested plants are now apparent in some southern blueberry fields.
- **Scout for:** [Raspberry Beetle](#), **northern raspberries**. This small beetle can cause fruit damage and be a major contaminant in northern raspberry fields.
- **Scout for:** **Root Weevils, strawberries**. Larvae & adults of [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#) are now being recovered from some strawberry fields.
- **Scout for:** [Blueberry Gall Midge](#), **southern blueberries**. Tip damage from this midge is showing up in blueberries. Damage is usually deemed to not be economic except in specific situations like new vigorous fields where gall midge can occasionally cause too much stunting of new growth.
- **Prime Time to Scout for:** **Mites in raspberries (northern growing areas):** [Twospotted mites](#) [Yellow mites](#)
- **Prime Time to Scout for:** [Winter Moth/Bruce Span Worm](#) **blueberries**
- **Prime Time to Scout for:** [Clay Colored Weevils](#) **northern raspberries & blueberries:** This early emerging species is a pest in northern growing areas where it feeds on newly emerging shoots and buds.
- **Prime Time to Scout for:** [Strawberry Crown Moth](#) **southern strawberries:** As plant growth resumes, plants weakened by SCM can be spotted. Infested plants will had a weakened crown and often will break off with a pull on the top growth.

Crop Work

All crops

- Vole management.
- Weed management.
- Fertilizer program.
- Can put out monitoring traps for spotted wing drosophila.

Blueberries

- Apply bloom applications to prevent fruit molds.
- Treat for [Mummyberry](#) as needed. (See Alert at top of newsletter)
- Scout for virus symptoms & send in samples for testing as needed.
- Scout for [leafroller larvae](#) feeding.
- Scout for virus symptoms & 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.
- Scout for [azalea bark scale](#) in southern blueberries
- Scout for [blueberry gall midge](#) damage.
- Can apply fungicides for fruit/blossom rot from 10% bloom through the end of bloom.
- After petal fall, can treat for [alternaria](#) and [anthracnose](#) prevention if needed.

Blackberries

- Bring in bees around 10% bloom.
- Apply bloom applications to prevent fruit molds.
- Scout for virus symptoms & send in samples for testing as needed.

Evergreen Blackberries

- Scout for and treat as needed for [blackberry rust](#).

Raspberries

- Burn back primocanes as needed.
- (northern areas) Scout for [clay colored weevil](#) feeding and treat as needed.
- Scout for [twospotted mites](#).
- Scout for virus symptoms & send in samples for testing as needed.
- Can apply a phosphite material for stronger root growth and root rot prevention.
- Scout for [yellow rust](#) and assess treatment options.
- Scout for [spider mites](#) and treat as needed.
- Bring in bees around 10% bloom.
- Can apply fungicides for fruit/blossom rot from 10% bloom through the end of bloom.

Strawberries

- (Southern strawberries) Can scout for [strawberry crown moth larvae](#).
- Scout for weevil notching.
- Can apply fungicides starting at 10% bloom to prevent fruit mold
- Scout for weevil adults and notching.
- Can apply slug bait.
- Scout for [powdery mildew](#) and treat as needed.
- Scout for [two spotted spider mites](#) and predatory, beneficial mites.
- Scout for [aphids](#).

Northwest Berry Nutrient Management Guides

- [Nutrient management in blueberries](#) (OSU)
- [Nutrient management in caneberries](#) (OSU)
- [B.C. interactive berry management guides](#)
- [June bearing strawberries fertilizer guide](#) (OSU)
- [Growing day-neutral strawberries in Western Washington](#) (WSU)

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.*

Events

Upcoming Regional Events & Commission Meetings

[Go here for Full Event Calendar](#)

Oregon State Open House Events

Details to be announced. At the North Willamette Research and Extension Center, Aurora, OR. Contact Bernadine Strik with questions, Bernadine.strik@oregonstate.edu

- **June 10 — OSU Strawberry Open House.** 1-4:30
- **July 1 — OSU Caneberry Open House** 1-5:00
- **July 8 — OSU Blueberry Open House.** 1-5:00

Upcoming National & International Berry Events

- **May 18-19 — National Processed Raspberry Council** ~ Semiahmoo Resort in Blaine, WA. [Go here](#) to make hotel reservations or call phone 360-318-2000. Be sure to identify yourself as part of the National Processed Raspberry Council. For more information, please contact Tom Krugman, 360-354-0948, TKrugman@redrazz.org
- **June 18-24 — Eleventh International Rubus and Ribes Symposium** ~ Charlotte & Asheville, North Carolina. [Go here](#) for their website with all the details.

- **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.

Archived Small Fruit Updates

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

[18-SFU04-29-15](#)

[17-SFU04-22-15](#)

[16-SFU04-15-15](#)