

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.

July 22, 2015

Week 30

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- [Washington Supreme Court Rules Piece Rate Workers Entitled to Paid Rest Breaks](#) (7/16, Stokes Lawrence)
- [New research shows spotted wing drosophila repellent naturally produced in fruits](#) (7/7, Growing Produce) I ran this last week but kind of buried it down in the grower resources section.
- [Oregon Nursery Receives Trade Leadership Award](#) (7/14, Growing Produce)
- [Blueline Blueberry Harvester](#) (2 ½ minute You Tube Video)

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

Of note this week:

- The risk of SWD infestation continues to increase. **Don't compromise your crop's value at this late stage—stay the course.** The alert & links are below.
- **New feature:** Just below I've got a 'research update' from Tom Walters at Walters Ag Research. I'm hoping that Tom and/or other researchers will be willing to contribute more quick updates on their present berry related research. Researchers--Contact me if you're interested (tom@peerbolt.com).
- **Personal opinion:** I try keep my own biases/opinions out of this newsletter as much as possible. For full disclosure I'm featuring the following link on the **GMO debate** fully aware that it reflects my own strongly held point of view on this critical issue.

[Unhealthy Fixation](#) (7/15, Slate).

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

Spotted Wing Drosophila Alert

High risk of fruit infestations in Northwest Berry Crops

- ***We can expect increasing SWD pressure as long as the weather remains mild.***
- *We're picking larvae up in commercial blueberry fields and many caneberry fields.*
- *If you're harvesting—**protect your crop.***
- *Stay on a regular insecticide application regime as needed & monitor the fruit to be sure you're maintaining control.*
- *Fields with infestations detected need to quickly move to a much shorter interval between applications.*

There will also be an **SWD Workshop** in Eugene on August 4th. Details are posted right below in the Events.

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

Regional Berry Events

- **August 4 — Spotted Wing Drosophila Workshop: Team Approach from Around the World** ~ 9 am to 1 pm, Eugene, OR. [Go here](#) for the details. Sponsored by OSU, WSU, USDA and NCAP.
- **August 18 — Oregon Strawberry Commission Fresh Strawberry Plasticulture Workshop and Demonstration** 9:30-5:00 [Go here for the agenda](#).

N. Washington Disease Management Research Update

From [Tom Walters](#), Walters Ag Research, Anacortes, WA. Tom is a private consultant/researcher. I'm hoping he'll continue sharing periodic updates on his berry crop projects. Here's his first update sent on Monday, 7/20/15:

- **First--Thanks** to the great guys at [Whatcom Farmers Coop](#) for their support of this trial work, and to all the grower cooperators for their help and for not shooting me when I show up in the fields unannounced.
- **Fumigation trial:** Plants in the [Vapam](#) and [Dominus](#) plots look surprisingly good compared to the field [Telone C-35](#) treatment. I was hoping they might be as good to the Telone C-35 standard, but the primocanes are actually taller and more abundant than the standard. This might be a consequence of shallower application of these products, close to the surface. Looking forward to seeing the comparative nematode numbers from these to better assess their efficacy.
- **Raspberry botrytis trial:** There has been very little botrytis this year, in spite of the mist system we installed in the trial plots to keep them moist and humid. Not great for research, but great news for growers! We have been getting some botrytis counts from fallen berries, which still rot nicely on the damp, misted ground. We are now down to the last harvests and evaluations in this trial.
- **Drip-applied Vydate trial:** We at least know that we did not damage the plants this way. Plants in the drip-treated plots are just as big as those treated with the standard surface application. We are hopeful that this application method will be added to the label. This dry year would have been a great one to apply Vydate via drip rather than having to wait for rain to incorporate it.



Bed Fumigation prior to planting raspberries



Regional reports

British Columbia, Fraser Valley

[Go here](#) for the B.C. Blueberry Council's Blueberry IPM Report for 7/17.

British Columbia, Fraser Valley (Monday 7/20)

- **Blueberries:** We're getting well along the road with the blues. Volumes are falling off as we get into the later Bluecrop pick. Liberty will pick this week and the last of the Draper first pick is just finishing. Elliot will start to pick I believe by the week of the 27th of July. Process fruit is getting scarce. The heat never seems to end and has brought a lot of fruit ahead before it's time. Aurora is starting to colour and I would imagine that it will be ready for first picks early in August. A lot of fields look exhausted right after picking. But once the fruit load is gone they do turn around and start to initiate some growth. With this incredibly dry growing season, I've seen considerable burned out plants in fields as a result of poorly maintained drip irrigation or just old systems with fully or partially plugged emitters. Time to evaluate and put an action plan together. I think we're looking at the future and we'd better be prepared.
- **Raspberries:** We've finished in a lot of fields this past weekend. By late this coming week it's over. Volumes are really down with growers seeing 20-30% drops in production versus last season. Berries were there but they just didn't size up. Quality was good though. Lots of SWD late in the pick which became very hard to control. And two-spotted spider mites are at significant levels needing control as the season ends very early.

British Columbia, Fraser Valley (Sunday 7/19)

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

- **Comments:** Back from Australia, where there is winter, ah bliss! It was cool and overcast. As for our regions, a good new blast of hot air is making things miserable. Fruit size is and was off for raspberry and blueberry, but not in all plantings. Healthy vigorous planting are doing remarkable well and I just simply cannot find much if any of the typical sunburns. Plants and fruit have nicely acclimatized. A cooling trend for the next ten days is coming. *Papaya in Australia:* A great harvest is forecast although cool temps are slowing their season down, as it is winter, but very tasty and large fruit, yum! Perhaps we can start planting fields of them soon if the weather shifts into what we have right now and winters become nonexistent?
- **Blueberries:** We're well into Bluecrop. Not much is left after first heavy duty pick and that is ripening fast. Early season and mid season varieties will be done by the end of July. Later season and late season varieties are pushing hard for attention to start harvesting them already. Buildup of SWD is there, tough to manage, but is doable. Irrigation is running as much as it can, sometimes a tad too much, but plants simply can't do it, the sink draw is too fast for the source to keep up. The quality of the fruit is suffering when temps go over 30C (86F), but remarkably stable otherwise.
- **Raspberries:** The main raspberry season is nearly over. Many berries seem to either be glued to receptacle or falling off in front of machines but still decent amounts are coming off the machines and handpicks, especially in early morning picks in the hot weather.
- **Strawberries:** Day neutrals are shining big time. There's enough canopy to shade the plastic so no more burns on the fruit. Thrips and the subsequent bronzing caused by them are a real problem as well as a

buildup of our perennial pest, Lygus bugs. Keep a close eye on them and do not neglect June bearing strawberry plantings. If they dry up now it'll cause a lack of vigor and poor fruit production next year.

- **Other fruit:** *Blackberries:* Huge fruit, real ripe, more to my own taste not sour, just very flavorful and sweet. Lots of fruit. *Figs:* Largest ever in my ten or so trees, many and ripe already. Will get a second set this year, awesome!!! *Sea Buckthorn:* Fruit is already ripe--three months ahead of normal, tasty, albeit a bit tart as it should be, loaded with vitamins. *Goji:* Overwhelmed with fruit on each bush, keeps blooming and producing, should be a record year. Still has little flavour...*Haskap:* Need water right now, plants look dreadful with leaves all brown and ugly, new growth is now happening.

Northern Washington, Whatcom County (Tuesday, 7/21)

SWD are under control. We've had to move to a five day spray rotation in some cases and are running out of options but then the season's just about finished.

- **Raspberries:** We were up to 95 F (35C) this last weekend again. The season is on the downswing. Probably be off 30% from last year overall. The plants had a tough time holding up to all the heat although Chemainus seems to have shown its worth. Held up to the hot and dry conditions pretty well considering. Meeker will finish next week and Wakefield will likely be done before the end of the month. Don't remember ever going into August with no raspberries left to pick.
- **Blueberries:** Have a good sized, good quality crop coming in. The heat has caused some shrivel and downsizing but still have a good looking crop.

Western Oregon, Willamette Valley

- **Blueberries:** (Tuesday, 7/21) *Processed:* We've got Draper, Bluejay and Jerseys coming in right now. The only Elliot field we've got should start at the end of the month. Surprising how well the quality has held up this year through the heat. Size might be off a little but yields look O.K.
- **Blueberries:** (Tuesday, 7/21) *Fresh:* Draper hand harvest is finishing up. Legacy and Liberty are also coming in. Elliots have started both machine and hand harvests. There are even reports of some Aurora fresh market picks having started. Pretty good quality fruit coming in. As is the case this season the hot, dry weather has led so some smaller fruit than expected and some shrivel. Yields won't be as high across the board as expected but given the conditions this year---it's a good crop in quality and quantity. Just won't be getting much for that late season window.
- **Blackberries:** (Tuesday 7/21) Marions basically finished up over the weekend. We've still got a few Black Diamond picking but they'll finish very soon. Marions will be down from last year but overall blackberry crop might be about the same. Price to the growers is off from last year also. I'd say that this was a good year in many ways for Black Diamond and the new Columbia Star varieties. Both came through difficult harvest conditions looking good. But it was a tough season for Marions. Should encourage the trend away from our older thorny varieties and toward planting the newer thornless one. Evergreens are still a couple of weeks away from picking. They aren't as advanced in timing as the mid season varieties.



Evergreen blackberries. Near Salem, 7/19/15

Photo by Bill Dinger

Blueberry Development Comparisons 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 ahead in development over the last two years.**

Northwestern Willamette Valley **Top – 7/17/15** **Middle – 7/18/14** **Bottom – 7/19/13**

Patriot

Bluejay

Liberty

Aurora

Elliott

Patriot Machine harvest began 7-1-15 (Week 27)

Blue Jay Machine harvest began 7-7-15 (Week 27)

Liberty Hand Harvest began Week 28

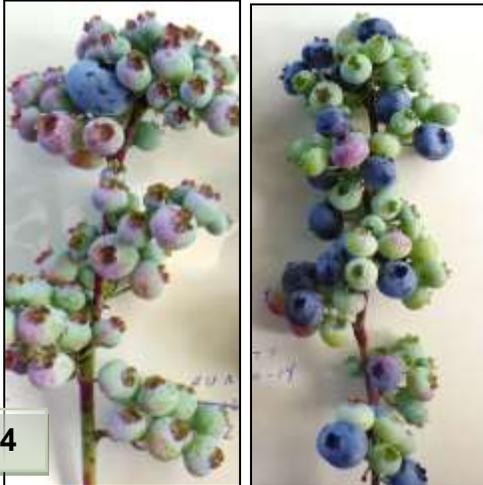


Week 29, 2015

Patriot Machine harvest began 7-12-14 (Week 29)

Blue Jay Machine harvest began Week 29 in 2014

Liberty Hand Harvest began Week 29 in 2014



Week 29, 2014

Patriot Machine harvest began Week 28

Bluejay Machine harvest began Week 29 in 2013



Week 29, 2013

Patriot

Bluejay

Liberty

Aurora

Elliott

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 28](#) (7/20)
- [USDA Market News \(Fruits & Vegetables\)](#)

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: (7/14) Central Coast Organic Strawberry Tour set for August 20.** Reports on recent insect and disease research and observations in California.
- [Team Rubus](#) by Gina Fernandez, North Carolina State Small Fruit Specialist. Reports on issues in blackberries and raspberries from the Southeast.

Climate/water

- Washington: [Severe drought nearly blankets Washington](#) (7/17, Capital Press)
- [El Nino may intensify into strongest in 50 years](#) (7/16, AccuWeather.com)
- California: [Strong El Nino likely this winter, but no end of drought seen](#) (7/14, Capital Press)
- [El Nino's effect on Central Oregon's dry desert farmers could be mild or wild](#) (7/18, Oregonian)
- [Record setting rains sweep through Southern California](#) (7/20/ Capital Press)

Labor

- Washington: [Court: Piece-rate farmworkers must be paid for rest breaks](#) (7/16, Capital Press)
- [Washington farmers alerted to change pay practices](#) (7/17, Capital Press)
- California: [State bill would allow immigration permits for farmworkers](#) (7/14, Capital Press)
- California: [Work permits for farmworkers gain traction in California](#) (7/16, Capital Press)

Plant Breeding

- United Kingdom: [Larger, sweeter Driscoll's Victoria blackberries 'a game changer'](#) (7/17, Independent)

Technology

- [Drone ready to work in fruit](#) (7/9, Good Fruit Grower)
- [Blue LEDs show promise as food preservation method](#) (7/15, Food Navigator)
- [High-tech Israeli sorting machine gets to know fruit inside out](#) (5/27, Fresh Fruit Portal)

Business/Marketing

- Oregon: [Commissions team with chefs to promote Oregon crops](#) (7/13, Capital Press)
- Washington: [Blueberry growers donate to Bite of Seattle](#) (7/17, The Packer)
- [Naturipe's #EattheRainbow touts blueberries, strawberries](#) (7/17, The Packer)
- [Why transparency should matter to food and beverage companies](#) (7/16, Forbes)

Pollinators

- [Environmental changes impacting crops and pollinators](#) (7/20, Ag Professional)
- [More bees lost in summer than winter](#) (7/13, Good Fruit Grower)
- [Report: Climate change threat to bumblebee populations](#) (7/13, Growing Produce)

North America

- Nova Scotia: [\\$1 million for Nova Scotian wild blueberry farmers](#) (7/20, Fresh Plaza)
- Maine: [Wild blueberry growers predict average or better harvest](#) (7/21, Bangor Daily News)

West

- [California drought not slowing strawberry exports to Canada](#) (7/17, Fresh Plaza)

International

- Europe: [Blackberry price stagnates, good market for red berries and blueberries](#) (7/20, Fresh Plaza)

- Britain: [Raspberry sales up 16%](#) (7/15, Fruitnet)
- Mexico: [Markets wake up to Mexican blues](#) (6/19, IBO)

Grower Resources ---- Week 30

- [Spotted wing Drosophila fruit fly causing havoc for B.C. cherries](#) (7/15, CBC News)
- [Six ways to help custom applicators do a great job](#) (7/20, Farm Futures)

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.

Scout for: [Silver leaf disease](#) symptoms in blueberries.

- *This is a recently identified disease that has so far been confirmed only in a few Draper variety fields in western Oregon. It's unknown how economic this disease will be.*



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

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 treat if needed: [Orange Tortrix leafrollers](#), raspberries & blackberries (SW Washington & Oregon).

- The larval hatch that, before SWD, caused our major crop contaminant problems is ongoing at this time.
- Fields that have been recording high adult pheromone trap counts are at high risk of having larval contaminant problems at harvest.
- Control materials, containing active ingredients specifically targeted at leafroller larvae such as Bacillus thuringiensis and Spinosad, are much more effective on these larvae when they're small and could be used at this time.

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

- Infected fruit is now becoming easy to distinguish from healthy fruit.
- The infected fruit colors earlier, shrivels, whitens and drops from the bushes easily when disturbed.
- Right now this fruit could be mistaken for green berry botrytis infected fruit.
- The inside of an infected berry will be filled with white fungal mycelium.

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

Additional, Ongoing Pest Information

Diseases

- **Scout for:** [Phytophthora root rot](#) raspberries. Look for primocane collapse.
- **Scout for:** [blackberry rust](#), (Phragmidium Rust) Evergreen blackberries.

Insects/Mites

- **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:** Root Weevils, strawberries & blueberries. Larvae & adults of [black vine](#), [rough strawberry](#), and [strawberry root weevils](#) are now being recovered from some fields.

- **Scout for:** [blueberry gall midge](#), **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.
- **Scout for:** **Mites in raspberries (northern growing areas):** [twospotted mites](#) [yellow mites](#)
- **Scout for:** [strawberry crown moth](#) **southern strawberries:** Infested plants will have a weakened crown and will often break off with a pull on the top growth.

Crop Work

All crops

- **Sample for & treat as needed for SWD fruit infestation.**
- Vole management.
- Weed management.
- Fertilizer program.
- Water management.

Blueberries

- Bird management.
- Scout for [mummyberry](#) infected fruit.
- Stay on top of aphid management where Scorch virus transmission is an issue.
- Scout for [leafroller larvae](#) & treat as needed.
- Scout for virus symptoms & send in samples for testing as needed ([shock virus](#); [scorch virus](#)).
- Scout for scale insects.
- Scout for weevil notching.
- Scout for [azalea bark scale](#) in southern blueberries
- Scout for blueberry [gall midge](#) damage.
- Can put out pheromone traps to monitor for leafrollers. ([orange Tortrix](#) and [oblique Banded](#))
- Scout for berry symptoms like green fruit botrytis, hail damage, mummyberry, etc.

Blackberries

- *Treat for prevention of SWD infestation.*
- Can put out pheromone trap to monitor for leafrollers. ([orange Tortrix](#) and [oblique Banded](#))
- Can apply fungicides for [fruit/blossom rot](#) from 10% bloom through the end of bloom.
- Scout for virus symptoms and send in samples for testing as needed.

Evergreen Blackberries

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

Raspberries

- *Treat for prevention of SWD infestation.*
- Scout for [yellow rust](#) and assess treatment options.
- Scout for yellow mites and [twospotted mites](#).
- Scout for virus symptoms & send in samples for testing as needed.
- Can put out pheromone traps to monitor for leafrollers. ([orange Tortrix](#) and [oblique Banded](#))



- Scout for [cane blight](#) and [cane botrytis](#) symptoms.

Strawberries

- **Processed harvest 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 and put out pheromone monitoring traps.
- Scout for weevil adults and notching.

Processed market June-bearers—finished harvesting

- *After harvest, can treat for SWD control if field is adjacent to other susceptible, ripening, crops.*
- [Weed control at strawberry renovation](#) (6/26/12, Michigan State Extension)
- Treat post harvest for SWD if needed especially if field is in close proximity to other ripening berry/stone fruit crops.
- Mow and treat immediately for SCM if needed.
- Mow and renovate 2-4 weeks after harvest unless pest pressure requires mowing and treating sooner.

Fresh market-still harvesting

- Scout for Lygus bugs.
- Scout for fruit damage symptoms like cat facing, slug damage, anthracnose, etc.
- Monitor ripe and ripening fruit for SWD larvae.
- Can apply slug bait as needed.
- Scout for Powdery Mildew and treat as needed.
- Scout for Two Spotted 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.

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](#)

Upcoming 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 13-15 — 6th Biennial Berry Health Benefits Symposium** ~Madison, Wisconsin. [Go here](#) for all the details.

Archived Small Fruit Updates

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

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

[28-SFU07-08-15](#)

[26-SFU06-24-15](#)