

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.

June 3, 2014

Week 23

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[British Columbia Berry Grower News](#) (Summer Issue) Good articles on the problems establishing a national strawberry council, the berry breeding program, the chemical registration process, and SWD management.

Labor Issues

- [Labor shortage estimate alarms Washington officials](#) (6/3, Capital Press)
- [Sakuma Brothers Farms opts out of Guest Worker Program](#) (6/2, Steve Sakuma's Blog) "Despite a worsening labor shortage in Washington State, Sakuma Brothers Farms announced today that it has decided to not participate in the federal government's H-2A Guest Worker program..."

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

Strawberry Harvest—Willamette Valley



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](#)

Regional reports

British Columbia, Fraser Valley

- **Blueberries:** (Monday, 6/2) Most varieties have finished flowering. There's just the tail end of bloom in Bluecrop and a bit to go in Elliot left. Fruit is sizing well with 6-7 berries per cluster is the average. Reka is a

bit higher. Crop looks good. Majority of flowers seem to have set into fruit. I'm hearing that small volumes may start being picked in the first week of July with volumes increasing into second week for fresh harvest. Machines about a week after. Warm weather moving things along with adequate soil moisture levels.



B.C Blueberries on May 31. Left: Reka. Right: Duke. Photos by Jason Smith

- **Blueberries:** (Monday, 6/2) Not much left to pollinate in blues except for the tag end of the Elliots. Getting the bees out now so we can spray for aphids and leafrollers where it's needed. Some pretty strong growth and rapid berry development which should increase even more after last week's rains and this week's promise of warm weather and sun. I'm not seeing much botrytis, so I think the bloom sprays were well done. Got into a field with some green immigrant leaf weevil today. Quite a few in each bush with lots of leaf notching. I think it's a bit early for them. But they are a new pest here, so I think we'll have to get a better handle on their emerging patterns.
- **Raspberries:** (Monday, 6/2) Raspberries are moving fast and bee activity is incredible. Most of the first botrytis sprays are on. I'm starting to notice some mite build ups as well so we may be in for some pre-harvest control measures. Crop looks good so far.

Northern Washington, Whatcom County

Warmer and dryer weather in the new forecast, better check to see if the irrigation will work.

- **Blueberries:** (Monday, 6/2) Dry warm weather will really help things along. Most bees are out of blueberries by now, and a few raspberries are showing early signs of stress. Crop continues to look like a monster coming at us. Last year we had Liberty already dropping some green fruit, this year, doesn't seem to be happening with the same regularity.
- **Strawberries:** (Monday, 6/2) Some strawberries are showing powdery mildew. Must be the cool, damp mornings and then warmth.
- **Raspberries:** (Monday, 6/2) A few raspberries are showing early signs of stress.

Western Oregon, Willamette Valley

- **Strawberries:** (Monday, 6/2) Good processed quality fruit is coming in as well as a lot of fresh market. Weather is cooperating so fruit is holding well in the field. Main issue, as usual, is labor.
- **Blackberries:** (Monday, 6/2) I am a little more optimistic about Marions than I was a couple weeks ago. We've had really good pollination and now having excellent sizing weather. Not saying a bumper crop or anything, the damage has been done but what fruit there is should do well. I definitely would have water going, been very dry. Starting to see a red tint to the berries, expect harvest to start by the end of the month. Black Diamonds continue to look really good, expect harvest around the 23rd. Bloom is pretty

much done except for late varieties, bees will be removed this week to start some clean up sprays. Evergreens have started to bloom



May 30, Near Gervais. Above: EY Black Diamonds Below: Marions Photos by Bill Dinger



Below: May 22, N. Willamette Research Center, Aurora. Left: Black Diamond. Right: Columbia Star



- **Blueberries:** (Monday, 6/2) Duke is just starting to show some color as are Reka and Earliblue. Fruit is sizing well with very moderate temperatures. Just a little green berry botrytis showing. No other pest problems. Soil moisture levels are the main thing to watch. There's a lot of water going right now. As we've said before—excellent potential. Just hope the labor's around to get as much into the fresh market as we can. Keep those cold storage figures down!

Blueberry floral bud development over the past week & compared to same week in 2013

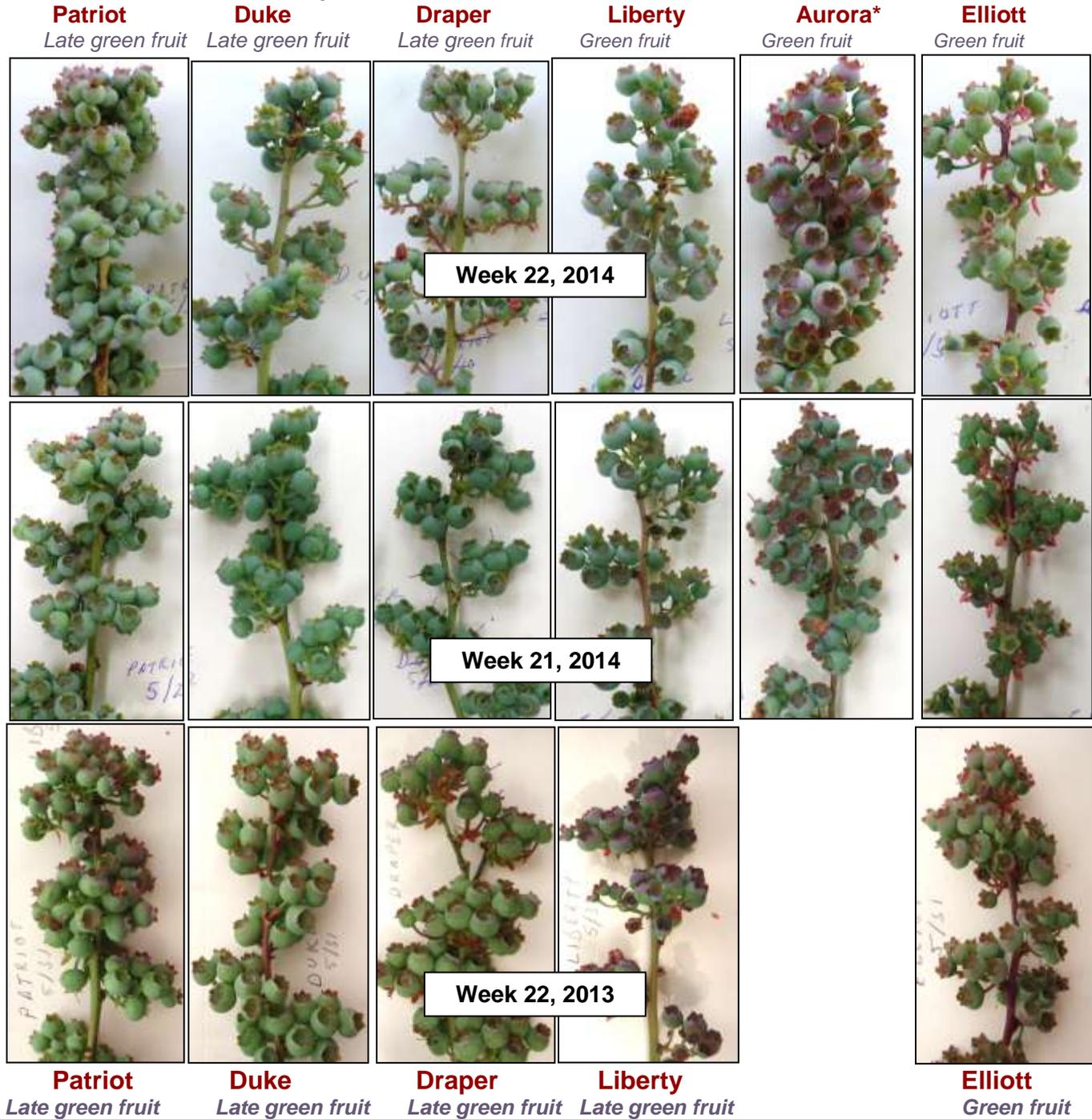
Notes:

- The same fields are being sampled each week are in the Forest Grove/Hillsboro area.
- Seems like fields across the Willamette Valley that I'm seeing are closer in development than it appeared earlier in the season. I'm dropping the comment about other areas being as much as a week ahead of the fields illustrated.
- This is an indication of stage of development only. Keep in mind that variations due to the subjective nature of these protocols are part of the process.

* On Aurora: The clusters show red on top but complete green on the bottom. Quite different coloring pattern from other cultivars. They aren't as developed as the photo coloring alone would indicate.

Northwestern Willamette Valley

Top – 5/31/14 Middle – 5/23/14 Bottom – 6/01/13



SWD report for week 23

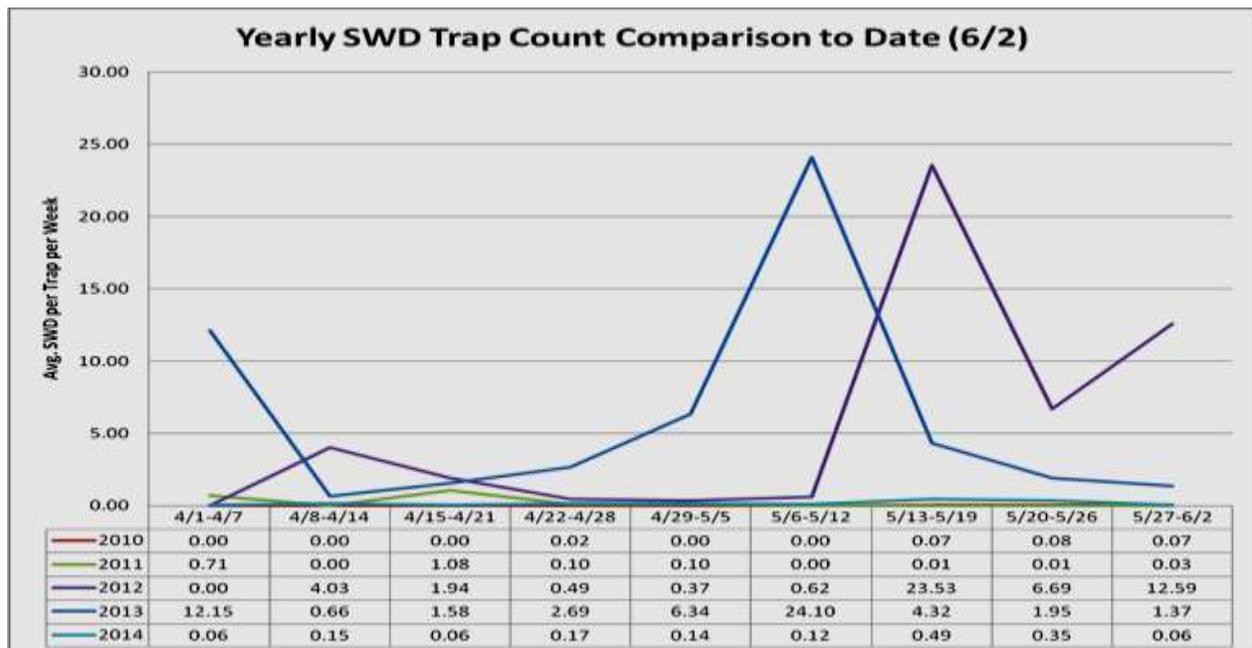
Willamette Valley public scouting program trap count comparisons

Season to date, 2010-2014

Note: This chart is an indicator of SWD population levels as compared from year to year but is *just an indicator*. We have changed some fields, some trap locations, and some trap baits and types as well as other factors that influence trap catches over the last five years as we learn and adapt. This is a dynamic, developing process—our ability to monitor and forecast this pest and the risks it poses has improved each year. Keep that in mind when interpreting this information.

Comments

- Total traps checked this week: 64.
- 2012 and 2013 have a lot more early adult activity than 2010 and 2011 when we had very low temperature events the winter before. The 2014 pattern is very similar to 2010 and 2011.
- On the one site where we have Salmonberry, no larvae have been recovered from fruit samples in 2014 compared to 2013 when SWD larvae had been recovered each of the previous three weeks prior to this week. Salmonberry fruit is just about done.



Potential SWD host status in the Northwest

- Processed strawberry harvest has started in Oregon and SW Washington. Blueberries are just beginning to color.
- Observed ripening fruit that are potential hosts are now expanding greatly and include cherries and strawberries in the fields as well as salmonberry, dewberry, Indian laurel, wild cherries and figs in border areas and landscapes.

Take home messages

- **Potential Hosts:** Many potential SWD fruit hosts, both wild and cultivated, are reaching the ripening stage when they are susceptible to infestation.
- **SWD Population Status:** All indications are that the SWD breeding population size right now is much smaller than in 2012 and 2013 due to the cold winter.
- **Environmental Factors:** Moderate temperatures (in the 70s F/20-26 C) favor SWD breeding.
- **Damage Risk Assessment:** At this point risk is low.

Each week the risk of economic berry crop damage increases. This is still an insect we have a lot to learn about and there is the potential for unexpected outbreaks in fields with ripe fruit. This is where field history and border habitat can be very useful in determining individual field risk.

SWD Articles/News

- [SWD Monitoring Report for Southern Interior Valleys of B.C.](#) (5/30)
- [Lessons learned from SWD in Michigan](#) (5/27, Growing Produce)

Maximum Residue Levels (MRLs) for Most Common Export Markets *(last updated 5/9/14)*

[Blueberries](#) [Caneberries](#) [Strawberries](#)

SWD Management Material Resources

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

- **Blueberries:** [SWD pesticide options and information](#)
- **Raspberries and blackberries:** [SWD pesticide options and information](#)
- **Strawberries:** [SWD pesticide options and information](#)

British Columbia

- [Spotted Wing Drosophila \(SWD\) Management in B.C. Berry Crops](#) *last updated 7/3/13. Some newer chemistries not yet listed.*



Glyphosate drift symptoms on a Chester blackberry field (photo by Charlie Anderson) Be careful out there...

Grower resources

- [OSU Mummy Berry IPM Blog](#) (Most recent entry: 5/27) *Great information source on Mummy Berry.*

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Industry news/resources

Newsletters/ berry reports

- [BC Blueberry IPM Newsletter](#) (6/1) *Weekly by [ES Cropconsult](#). Sponsored by the BC Blueberry Council.*
- [Whatcom Ag Monthly](#) *Produced by WSU Whatcom County Extension. Includes excellent berry crop information.*
- [The New Jersey Blueberry Bulletin](#) (5/19) *A weekly grower update from Gary Pavlis, Rutgers Extension agent.*
- [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.*
- [Export Market Report](#) (5/30) *from General Produce Company*
- [Weekly Market Report](#) (6/2) *from General Produce Company*
- [The Source](#) (6/2) *Market reports from The Produce News.*
- [Imperial Frozen Foods Newsletter—Market Update for May 29](#)

Magazine/website 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](#).
- **Fresh Fruit Portal:** [blueberries](#), [blackberries](#), [raspberries](#), [strawberries](#).
Recent stories for the various berries from Fresh Fruit Portal.

Berry research blogs

- [Strawberries and Caneberries](#) by Mark Bolda, UC Davis Berry Extension Agent. **Recent Entry (5/27):** **Thorough discussion of predatory mites in berries available** *Reports on recent insect and disease research and observations in California.*
- [Team Rubus](#) by Gina Fernandez, North Carolina State Small Fruit Specialist. **Recent Entry (5/23):** **Blackberry Flowers to fruit 2014** *Reports on issues in blackberries and raspberries from the Southeast.*

Breeding/Research

- Chile: [Three new raspberry varieties to compete in international market](#) (5/29, Fresh Plaza)
- [Blueberry leaf extract can add shelf life](#) (6/3, The Packer)

Business

- Oregon: [Gladstone acquires Oregon blueberry acreage](#) (6/3, The Packer)
- [BEI Woes—Buyers cautioned](#) (5/29, Fruit Grower News)
- [Inventure Foods announces appointment of Don Hammer as General Manager, Frozen Division](#) (6/2, IT Business Net)

Technology

- [Maersk begins shipping revolution with new tech](#) (6/2, Fresh Fruit Portal)

Labor

- [Minimum wage increases advance from California to Seattle](#) (5/29, Bloomberg News) *Seattle has passed a \$15/hr. minimum wage.*
- [Farmers face conflicting rulings on H-2A family housing](#) (6/2, Capital Press)

North America

- New Jersey: [Blueberries barely behind for 2014](#) (5/29, The Packer)
- North Carolina: [Blueberry crop looking good despite late freeze](#) (5/30, Fresh Plaza)
- North Carolina: [Strawberries turn into long-term endeavor](#) (5/29, Fruit Grower News)

International

- Mexico/China: [Jalisco will market berries in China this year](#) (5/29, Fresh Plaza)
- France: [Still plenty of growth opportunities for berries in France](#) (5/30, Fresh Fruit Portal)
- Peru: [Camposol continues to develop blueberry export expansion](#) (6/2, Fresh Plaza)
- China: [Food replacing oil as China's commodity of Choice](#) (5/29, Bloomberg News)

Field Days

- **June 11 — OSU Strawberry Open House** ~ 1:00-4:30 pm, North [Willamette Research and Extension Center](#) (NWREC) [Click here](#) for full information.
- **June 12 — WSU Strawberry Field Day** ~ 1:00-3:00 pm, WSU Goss Farm (formerly Farm 5), 15403 Bowman-Hilton Road, Puyallup. For information contact [Dr. Pat Moore](#), 253-445-4525.
- **July 9 — OSU Caneberry Field Day** ~ 1:00-5:00 pm [North Willamette Research and Extension Center](#).
- **July 16 — OSU Blueberry Field Day** ~ 1:00-5:00pm [North Willamette Research and Extension Center](#).
- **July 17 — WSU Raspberry Selection Trials Machine Harvest Field Day** ~ 1-3 pm - Honcoop Farm, Lynden WA. Contact [Pat Moore](#) 253-445-4524 for more information.

Event calendar

- **June 5 — Managing Mummy Berry Disease in Blueberries – Farm Tour** ~ 2-4:30, Alvador, OR. [Click here](#) for details. Organized by the Northwest Center for Alternatives to Pesticides (NCAP).
- **June 11 — OSU Strawberry Open House** ~ 1:00-4:30 pm, North [Willamette Research and Extension Center](#) (NWREC) [Click here](#) for full information.

- **June 12 — WSU Strawberry Field Day** ~ 1:00-3:00 pm, WSU Goss Farm (formerly Farm 5), 15403 Bowman-Hilton Road, Puyallup For information contact [Dr. Pat Moore](#), 253-445-4525. “As in past years the field day will consist of an informal wander through the strawberry plots. This will be an opportunity to see some of the recent PNW releases – Puget Crimson, Charm, Sweet Sunrise, Valley Red, Nisga’a, material from some of the other programs and some promising selections. It is also an opportunity to discuss directions for strawberry research.”
- **June 18-19 — [Annual Maximum Residue Limit \(MRL\) Harmonization Workshop](#)** (4/14, Growing Produce) In San Francisco. Organized by the California Specialty Crops Council. [Click here](#) for registration & agenda information.
- **June 26 — Willamette Valley Berry Fieldman/Grower meeting**, 8am at [North Willamette Research and Extension Center](#). Amy Dreves, OSU Entomologist, will be joining us to discuss SWD status this season. Call or [email](#) Peerbolt Crop Management for information, 503-289-7287.
- **July 9 — OSU Caneberry Field Day** ~ 1:00-5:00 pm [North Willamette Research and Extension Center](#) (NWREC) A focus on the breeding program & research on conventional and organic production systems for commercial growers. Details TBA.
- **July 16 — OSU Blueberry Field Day** ~ 1:00-5:00pm [North Willamette Research and Extension Center](#) (NWREC) A focus on the breeding program & research on conventional and organic production systems for commercial growers. Details TBA.
- **July 17 — WSU Raspberry Selection Trials Machine Harvest Field Day** ~ 1-3 pm - Honcoop Farm, Lynden WA. Contact [Pat Moore](#) 253-445-4524 for more information. We will be harvesting the 2011 and 2012 machine harvesting plantings that day prior to the field day. Harvested fruit from the plots will be on display.
- **July 20-23 — International Precision Ag Conference** ~ Sacramento, CA. [Click here](#) for article. [Click here](#) for website with all the details.
- **August 20 & 21—North American Strawberry Growers Association** ~ Summer tour, in BC. [Click here](#) for the NARBA website. More details coming soon.
- **November 19 — Oregon Strawberry Commission workshop** "Fresh market strawberries: What it takes to be successful." 8am-7pm, lunch and dinner provided. Admittance is free. Woodburn, OR. More details to follow. Contact lora@peerbolt.com for more info.

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Week 23--- Pest management & field work

Pest Alerts

Time to scout for and treat if needed: Yellow Rust, raspberries



Stages of Yellow Rust (from left) spermagonia, aecia, uredinia: It has not yet reached the uredinia stage.

Middle photo by Carolyn Teasdale, others by Tom Peerbolt

- Yellow rust is 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 and can quickly defoliate canes if left untreated.
- Evaluate disease incidence and stage to determine whether (and when) fungicide applications are warranted.

Scout for: Green Berry Botrytis Fruit Rot, blueberries

Photos are from the May 24th, 2013 [Blueberry IPM Newsletter](#) published by [E.S. Cropconsult](#) for the [BC Blueberry Council](#).

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- The weather warming and drying will help reduce the incidence of green berry botrytis.
- We’re seeing and getting reports of green fruit botrytis over the past couple of weeks. Fungicide treatments are of limited efficacy in controlling the infections at the green fruit stage.

Time now to prevent: Ripe Fruit Rots, Blueberries

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.



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.

Anthracnose fruit rot photos by Caroline Teasdale



Time to scout for (and take immediate action if found and verified): [Scorch virus](#), **blueberries**

- Symptoms are visible in infected fields.
- This disease is vectored aphids.
- Infected bushes **do not** return to productivity and should be removed ASAP to limit the disease spread.
- [Instructions on how to submit blueberry tissue to the BC Ministry of Agriculture Plant Diagnostic lab for insect or disease testing.](#)

Time to scout for (and not do a darn thing about if verified): [Shock virus](#), **blueberries**

- Symptoms are visible in many 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](#), **strawberries**

- Dry, warm, humid conditions favor powdery mildew in strawberries.

Additional, Ongoing Pest Information

Diseases

- **Scout for:** [Phytophthora Root Rot](#) **raspberries** Look for primocane collapse.
- **Scout for:** [Purple Blotch](#) **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:** [Raspberry Beetle](#), **northern raspberries.** This small beetle can cause fruit damage and be a major contaminant in northern raspberry fields. Leaf feeding pattern is very distinctive.
- **Scout for:** **Root Weevils, strawberries & blueberries.** Larvae & adults of [Black Vine](#), [Rough Strawberry](#), [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

- Vole management.
- Weed management.
- Fertilizer program.
- Water management.
- Can put out monitoring traps for Spotted Wing Drosophila.

Blueberries

- After petal fall, can treat for alternaria and anthracnose prevention if needed.
- 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 [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.
- Can put out pheromone traps to monitor for leafrollers.

Blackberries

- Have bees in by 10% bloom.
- Can put out pheromone trap to monitor for leafrollers.
- 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

- Scout for raspberry beetle feeding symptoms
- 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 apply a phosphite material for stronger root growth and root rot prevention.
- Have bees in by 10% bloom.
- Can apply fungicides for fruit/blossom rot from 10% bloom through the end of bloom.
- Can put out pheromone traps to monitor for leafrollers.
- Scout for Cane Blight and Cane Botrytis symptoms.
- Can put out pheromone traps to monitor for leafrollers.

Strawberries

- (Southern strawberries) Can scout for Strawberry Crown Moth larvae.
- Scout for fruit damage symptoms like cat facing, slug damage, anthracnose, etc.

- Monitor ripe and ripening fruit for SWD larvae.
- Scout for weevil adults & notching.
- Can apply fungicides for fruit/blossom rot from 10% bloom through the end of bloom.
- 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.
- In day neutral varieties scout for lygus bug and assess need for treatment.

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Archived Small Fruit Updates

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

[22-SFU05-27-14](#) [21-SFU05-20-14](#) [20-SFU05-13-14](#)