

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.

April 22, 2014

Week 17

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- **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.
 - **[Updated MRL list for blueberries and raspberries](#)** (4/15), Developed by Bryant Christie for the Washington Blueberry and Red Raspberry Commissions.
 - **[Blueberry market, the most dynamic in 2013](#)** (4/18, Fresh Plaza)
- [The Weather Cafe](#) by Rufus La Lone [Small Fruit Cold Storage report](#)

Comparing week 17 in previous years

These are all B.C. Fraser Valley reports on blueberries. TP

April 19, 2014: We're moving quickly into the early bloom phase on Reka and Duke. Some Reka fields on sandier soils very close to 5% bloom.

April 22, 2013: Things are going to roll now in the blues. Lots of bloom to come with the forecasted warm conditions this week. A good percentage of bloom on Reka, Bluegold with early bloom showing on Duke and some on Bluecrop.

April 23, 2012: Dukes should bloom within the next 7-10 days. Already some bloom is starting east of Abbotsford. Warmer weather should move things along.

April 26, 2011: Development stage of blues is all over the map with multiple varieties capable of popping all at the same time if this cool weather turns to heat all of a sudden.

April 25, 2010: Blueberries really popped last week after the warm weather of Apr 18-19 (68F-77F). Lots of bloom going on as well as a lot of hurry up fungicide spraying for the first major bloom spray. All varieties have significant bloom with the exception of Elliot.

April 27, 2009: Last week's warm weather moved growth along. Dukes, Bluecrop, Hardiblu at early pink bud, Reka at pink bud and white bud to early bloom. If we get some warmer evening weather this week, things will really push. I even saw some Elliots in early pink!

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](#)

Disease alert ([Click here](#) to go to the other Pest Alerts)

Time to treat for: Mummyberry in blueberries

The second phase of Mummyberry infection is now being reported in some blueberry fields in both the Willamette Valley and Whatcom County. This is the flagging of laterals with a distinct leaf pattern often visible. This disease gives you two chances to manage it. Here's the second one. Protection of the blossoms with a fungicide can prevent the spores being released from the flagging laterals from infecting the blossoms and becoming the distinctive white, shriveled fruit.



Photos taken 4/21/14 in a Whatcom County blueberry field (Tom Walters' photos)



(Below) Photo taken last year on 4/26/13 in a Liberty blueberry field in the Willamette Valley (Tom Peerbolt's photo)



Regional reports

British Columbia, Fraser Valley

- **Blueberries:** (Saturday, 4/19) Experiencing liquid sunshine in BC too. Expected to continue through Tuesday. Some Reka fields on sandier soils very close to 5% bloom. Not too much for disease showing up at this point. Things seeming a bit earlier than 2013. Agree that they could slow down a bit. If we get some heat after liquid sunshine bees could be coming into fields by the end of the week. Crop is still looking decent.
- **Blueberries:** (Sunday, 4/20) We're moving quickly into the early bloom phase on Reka and Duke. The backward weather has slowed things down a bit but I think if we get a day or two of warm weather there will be a push to bloom. Bees are being placed in some of the early fields and we're moving some bees into fields that are close to bloom in anticipation that there may be a rush to get them in when weather conditions improve. Last year the sudden bloom caught a lot of people off guard and bees were late in being placed and some pollination days were missed.
- **Blueberry & Raspberry Weevil Alert:** (Sunday, 4/20) Just another warning to check fields for clay coloured weevil activity. This is especially true for baby fields. I was in a couple of baby fields last week that went from no damage to severe cane bark and leaf bud damage in a matter of a couple days. This can be devastating to these fields and really set them back.
- **Raspberries:** (Sunday, 4/20) The cooler weather and heavy rain of the past few days has turned the colour on the newly developing raspberry laterals to that sickly yellow green colour that only sunshine and warmth can change. Doesn't look like a big weather change is going to happen this week though. But maybe the forecasters will be wrong.

Northern Washington, Whatcom County (Saturday, 4/19)

- **Raspberries:** More cold damage showing in raspberries than it looked like we would have from checking the fields after the freeze.
- **Blueberries:** Blueberries have started to take off again after hitting "neutral" for the last week or so. I thought we going to be ahead of last year, but now I think we are pretty close to last year, at least time wise. Fruit set for all blueberries looks far superior to last year. We could sure use a break in the wet weather to get back on course for cover sprays.
- **Blackberries:** The only blacks I pay attention to are the one block of Chester, and they look fine. (Don't they always??!!)

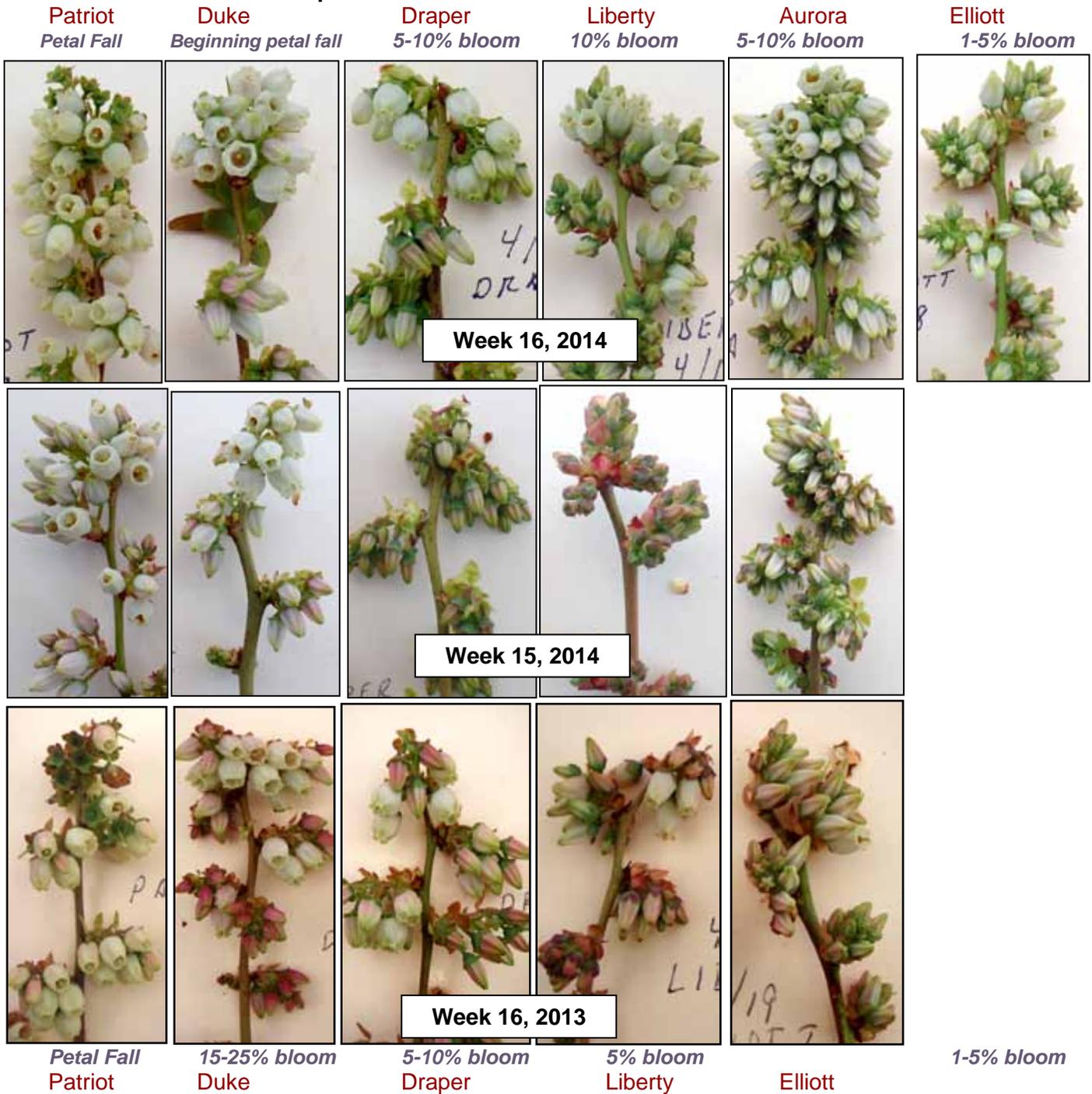
Western Oregon, Willamette Valley

- **Blueberries:** (Monday, 4/14) We're close to or maybe ahead of last year but then we had about 4 days in the 80's in early May last year that set a lot of our harvest timing. Ended up with that huge amount of Duke coming on at the same time. Hope we can avoid that kind of event this year. Crop looks very good. We've had decent early pollination weather. This week looks cool with showers and rain. As long as we avoid freezes and heat waves we should be OK.
- **Strawberries:** (Monday, 4/21) First bloom sprays are going on some fields this week. Bloom is moving along. Still looking like an early start to harvest.

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

Western Willamette Valley

Top – 4/18/14 Middle – 4/11/14 Bottom – 4/19/13



- **Blackberries:** (Monday, 4/21) It appears we will have an early season again this year. I expect to see first blooms in the Blacks about the same time as last year. Some primocane spraying going on and second shots of sulfur. Rust sprays in Evergreens too. Maybe my perspective is off from looking at Marion fields and they aren't any better than normal but Black Diamonds continue to look great. Marions continue to look worse. I was expecting winter damage from the December temps but not to this extent, way worse than the damage from the December 2009 cold. Usually you know which fields are going to be affected because of prior history but this time not only is it weak every year fields but also healthy alternate year fields that have been affected. The only explanation I can offer is the cold came a couple weeks earlier than 2009 and the plants were not as dormant. If it would have occurred at the end of December, probably would have still been damage but not to this extent. I also don't think the cold we had in February helped anything. As far as I am concerned the jury is still out on Columbia Star and cold damage, not enough experience with it to know and not enough fields around to evaluate. I will say the four plants in my backyard look great.

The following pictures of Black Diamonds and Marions are both from the same farm, maybe 500 yards apart. Black Diamonds are in every year production and Marions are alternate year production. I know of a few good looking Marion fields, will try to get pictures of those for next week.—Bill Dinger



Above-Black Diamonds on April 18, 2014.



Same field in both photos (Marions), just trying to show a better shot of the damage.

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Blackberry cold damage

Analysis and recommendations from Dr. Bernadine Strik, OSU Horticulturist

"We have a nicely replicated planting in the mature organic blackberry research plot at the NWREC. When assessing damage yesterday, it was clear that there is no cold damage in Black Diamond, whereas there is cold damage in Marion with treatment effects."

Observations/Comments

- The August-trained plants have more injury than the February-trained and there appears to be more damage with weed mat mulch than bare soil or non-weeded (need to do a more formal evaluation to be sure of this).
- This seems to confirm that the plants were in the acclimation phase when the cold temperatures hit in early December. We got to 10F at the NWREC.
- Any treatments that promote later growth, including summer training and vigorous growth with weed mat would have entered dormancy later than the other treatments thus increasing sensitivity to cold.
- We are seeing damage to Marion in the breeding plots also, even though bud sampling in late winter showed little damage.

Types of Injury

- There are different types of cold injury – growing point, bud base, and cane.
- We are seeing some cane damage in grower fields. If canes or the bud base are damaged and there is lateral growth, these laterals may “collapse” – grow well and then wilt.

Foliar Feeding: Cautions and Considerations

- While it's hard to deal with bud base damage, if there is partial cane damage, foliar fertilization can help to support lateral growth so the cambium of the cane has the time needed to do repairs.
- We have resisted putting specific recommendations of foliar feeding during delayed dormant and fruiting lateral development stages because it would be possible to do “too much” and burn the young leaves.
- Also, foliar feeding will not “solve” problems with poor bud break or “fix” canes that are damaged. It's not a miracle cure.

Recommendations: With that said, if there is partial cane damage and the cane is thus limited on translocation of mobile nutrients, foliar feeding would help get the laterals through the early development period. I would recommend a low foliar rate of nitrogen (e.g. 5% urea) as well as calcium. It's hard to mix calcium with potassium, but potassium might be needed also (caution on not applying too high a rate as this will burn leaves). I would apply a foliar every 2 weeks until first bloom.



Grower resources

- [Growing Day-Neutral Strawberries in Western Washington](#) *A recently published WSU Fact Sheet (10 page pdf)*
- **Spring Weather Risks**
 - **Pictorial blueberry growth stages with temperature damage thresholds**
 - [Blueberry growth stages and critical spring temperatures](#) (Michigan State Extension)
 - The relevant stages and temperature thresholds from the chart:

- § **Late pink bud:** “Individual flowers fully developed. Expanded corollas are now white but still closed. This bud stage can tolerate 24 to 27°F (-4.4 to -2.8°C).”
- § **Full bloom:** “Most of the flowers on the bush have opened. The bloom stages can tolerate 28°F (-2.2°C).”
- § **Petal Fall:** “The corolla tubes are falling off the flowers, revealing small green fruit. This is the most vulnerable stage to freeze injury. Damage can occur at 32°F (0°C).”

- **Early Spring Weather Management Information**

- [Using your sprinkler system to protect blueberries from freezes](#) (Eric Hansen, Michigan State Small Fruit Specialist)
- (All berries) [Frost protection: Tips & Techniques](#) (Kathy Demchek, Penn State)

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Industry news/resources

Newsletters/ berry reports

- [BC Blueberry IPM Newsletter](#) (4/18) Weekly by [ES Cropconsult](#). Sponsored by the BC Blueberry Council.
- [The Bluespaper](#) for April. Produced monthly by the US Highbush Blueberry Council.
- [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](#) (4/21) Market reports from The Produce News.

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:4/21-- Unusual flare-up of Leaf Blotch Disease in strawberry** Reports on recent insect and disease research and observations in California.
- [Team Rubus](#) by Gina Fernandez, North Carolina State Small Fruit Specialist. **Recent entry:4/18 – Cane Damage to Blackberries in Some Locations** Reports on issues in blackberries and raspberries from the Southeast.

Pollination

- [Pesticides, malnutrition blamed for massive bee die-off](#) (4/15, Capital Press)
- [Judge allows pesticide bee lawsuit to proceed](#) (4/21, Capital Press)
- Oregon: [Mass honeybee die-off at Sherwood](#) (4/22, Capital Press)

Climate/Water

- [El Nino possibility adds uncertainty to South American forecasts](#) (4/22, Fresh Fruit Portal)
- [Late 'rescue precipitation' as uncertain savior](#) (4/21, Capital Press)
- Oregon: [Rains help east Oregon water picture](#) (4/16, Capital Press)

Labor

- [Farm labor shortage reported in Washington](#) (4/22, Capital Press)

Marketing/Business

- [Shelf life extension big challenge in growing berry consumption](#) (4/18, Fresh Plaza)
- [Fruit, vegetable prices on the rise with drought](#) (4/16, The Packer)
- [USDA's Market Access Program \(MAP\) helps boost U.S. blueberry exports](#) (4/17, Fresh Plaza)

Health News

- Chile: [Study to reveal antioxidant properties of Chilean blueberries](#) (4/21, Fresh Fruit Portal)

West

- California: [Gourmet Trading Company announces early start of California blueberry season](#) (4/22, Fresh Plaza)

- California: [California expects minimal losses despite drought](#) (4/21, The Packer)
- California: [Good demand for berries](#) (4/22, Fresh Plaza)

North America

- Florida: [Diseased plants, weather blamed in 30% drop strawberry production](#) (4/17, Fresh Plaza)

International

(FFP=Fresh Fruit Portal)

- Chile: [Rough blueberry season reminds Chile of priorities](#) (4/8, Fresh Fruit Portal)



Fog over a Willamette Valley Farm, 4/18/14 Photo by Jason Myer

Food safety meetings

OR Blueberry, Strawberry, and Raspberry & Blackberry Commissions

Free Food Safety “Train the Trainers” Workshops—3 hour program

[Click here](#) for all the information and to sign up

- **April 23** — Unger Farm Store, Cornelius
- **April 25** — Santo Community Center, Medford
- **April 30** — Mary's River Grange Hall, Philomath

Event calendar

- **April 25— Oregon Raspberry and Blackberry Commission** ~ Budget hearing and Committee meetings. Starts at 4pm. [Click here](#) for the agenda. Call 541-758-4043 or [Email](#) Philip Gutt for more information.
- **April 29 — Oregon Blueberry Commission** ~ 12 pm (Budget Hearing), at Chemeketa Events at Winema, Building 48, Room 210. Contact Bryan Ostlund for more information at 503-364-2944 or bryan@ostlund.com.
- **May 8 —Oregon Strawberry Commission** ~ [Langdon Farms Golf Course](#), 6pm. Call 541-758-4043 or [Email](#) Philip Gutt for more information.
- **May 11-13 — International Raspberry Organization** ~ Chuzhou, China. [Contact Henry Bierlink](#) for more information.
- **May 21 — Workshop for Machine Harvesting Fresh Market Blueberries** ~ 9-4pm , [North Willamette Research and Extension Center](#). [Click here](#) for registration & agenda.
- **New Posting: May 29 — Willamette Valley Berry Fieldman/Grower meeting**, 8am at [North Willamette Research and Extension Center](#). Call or [email](#) Peerbolt Crop Management for information, 503-289-7287.
- **May 29 — National Processed Raspberry Council**, SeaTac Marriott, Seattle, WA. For more information, call Tom Krugman at 360-354-0948. [Click here](#) for the Council's website.
- **June 11 — OSU Strawberry Open House** ~ 1:00-4:30 pm North [Willamette Research and Extension Center](#) (NWREC) *A focus on the breeding program & research for commercial growers. Details TBA.*
- **New Posting: 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.

- **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.

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Week 17-- Pest management & field work

Disease alerts

Time to start scouting for: [Yellow Rust](#) Raspberries –



Stages of Yellow Rust (from left) spermatogonia, aecia, uredinia: Right now it's mostly in the first stage.
(Middle photo by Carolyn Teasdale, others by Tom Peerbolt)

- Yellow rust is now changing spore stages from black overwintering spores (teliospores) to yellow/orange colored 'blisters' (spermatogonia) on the top surface of leaves.
- This is followed closely by a very visible, almost day-glow orange/yellow spore stage (aecia).
- The 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.

Vector management: [Scorch virus](#) – Areas with confirmed scorch virus present.

Blueberries, Vector (aphid) management

- From an April, 2011 B.C. Pest Alert: "Blueberry scorch virus is transmitted by aphids. An effective aphid control program should be used by all growers. *Fields should be treated before bloom with a registered aphicide to control the over-wintering aphids before they reproduce and disperse.*"
- Click on the blue link above for full information from the B.C. Ministry of Agriculture. Check with your berry management specialists, both public and private, for more specific recommendations and selection of appropriate management materials.
- You can also email the B.C. Blueberry Council's research coordinator, [Karina Sakalauskas](#) (or call her at (604) 613-2133) for information.

Time to scout for: [Shock virus](#) – southern blueberries.

- Symptoms are becoming visible in many fields in the southern areas.

- 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.



Blueberry Shock Virus symptoms.
(Photo by Caroline Teasdale)

Time to treat for: [Downey Mildew](#) boysenberries, Kotata blackberries (occasionally other blackberries): This is a systemic disease that only displays symptoms if environmental conditions are right in the spring. It can cause major losses due to misshapen berries. A distinctive red leaf pattern is also diagnostic of the disease. Phosphite applications in the spring are recommended to prevent outbreaks.

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 becoming more apparent in some southern blueberry fields.*
- **Scout for: Root Weevils, strawberries.** *Larvae 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 due to begin showing up in southern 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](#)** *There are reports of higher than normal early mite populations in northern raspberry fields.*
- **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 have a weakened crown and often will break off with a pull on the top growth.*
- **Prime Time to Scout for: [Cane and Leaf Rust](#) blackberries**
- **Time to treat for: [Redberry Mite](#) evergreen blackberries:** *Delayed dormant sprays of lime/sulfur or elemental sulfur for Blackberry Rust and Redberry Mite are recommended ASAP.*

Crop work

All crops

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

Blueberries

- Bring in bees around 10% bloom.
- Plan for bloom applications to prevent fruit molds.
- Treat for [Mummyberry](#) as needed. (See Alert at top of newsletter) *You can scout for sprouting mummyberries on the ground but they can be very difficult to find. Base treatments on plant stage, environmental conditions and the past history of the field and surrounding fields.*
- Scout for virus symptoms & send in samples for testing as needed.
- Scout for [leafroller larvae](#) feeding.
- Scout for [Shock virus](#) symptoms in southern area fields.
- Plan for pre-bloom [aphid](#) control where [scorch virus](#) transmission is an issue.
- Scout for [winter moth/Bruce spanworm](#) larvae.
- Scout for scale insects.
- Scout for weevil notching.

Blackberries

- Scout for [Purple Blotch](#) lesions in Marion berries to assess field disease levels for later treatments.
- Can apply lime sulfur for [Redberry Mites](#) and/or disease management.
- Cane burn as needed.

Evergreen Blackberries

- Can still apply a delayed dormant spray of lime/sulfur or elemental sulfur for Redberry mites and 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.

Strawberries

- As plants start to grow, watch for weak growing areas and check plants for [weevil larvae](#), [root rot](#) and/or cold damage.
- Can apply fungicide at 10% bloom.
- (Southern strawberries) Can scout for [Strawberry Crown Moth](#) larvae.
- Can apply phosphite materials to strengthen root systems and manage root rot.

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Archived Small Fruit Updates

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

[16-SFU04-15-14](#) [15-SFU04-08-14](#) [14-SFU04-01-14](#)