

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 9, 2013

Week 28

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Coming events

- **July 10 — Smart Sprayer Demo** ~ 11 am, [North Willamette Research & Extension Station](#), Aurora. [Click here](#) for details. *This is just before the caneberry field day—come a little early. Looks pretty interesting.*
- **July 10 — OSU Caneberry open house** ~ 1-5 pm, [North Willamette Research & Extension Station](#), Aurora. [Click here](#) for details.
- **July 11 — WSU Raspberry Selection Trials Machine Harvest Field Day** ~ 1-3 pm - Honcoop Farm, Lynden WA. Contact [Pat Moore](#), 253-445-4524 for more information.
- **July 11 — WSU Mt Vernon NW Washington Research & Extension Center Field Day** ~ 3:30-6 pm - [Click here](#) for directions.
- **July 17 — OSU Blueberry field day** ~ 1-5 pm, [North Willamette Research & Extension Station](#), Aurora. [Click here](#) for details.

[The Weather Cafe](#) by Rufus La Lone

[Small Fruit Cold Storage Report](#)

Swd populations continue to build in the region with more infestations documented in commercial raspberry and blackberry crops. Growers in most cases are doing a commendable job managing this pest. But as the Willamette Valley (and others—just at different timings) get into the later picks on mid season blackberries, raspberries and Duke blueberries with older, less valuable fruit, there's a natural tendency to slack off a bit and stretch out or skip later insecticide applications.

Don't. This is the ideal outbreak situation:

- There's a lot of soft, vulnerable fruit.
- SWD population growth is accelerating and is at a much higher level than just two weeks ago when we started.

Another action growers should consider: Establish an onfarm routine sampling the fruit for SWD larvae using the baggie test described below in the swd report. By doing this you can:

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](#)

- Assure your fruit receiver that you are effectively managing the pest.
- Identify an infestation in time to be able to respond quickly and effectively.
- Identify the problem before it exceeds the processor's threshold.
- Identify the area of the field that is infested first.
- Use this information to be able to treat only that part of the field in the future and/or alter the border habitat that could be harboring the SWD that could re-infest your field.

The salt water baggie test is cheap and easy. Get one of the guys on the machine or at the field-receiving station trained and equipped. Could be a good investment.

Tom Peerbolt, SFU Editor

[Click here to jump to the SWD resource section](#)

Regional crop information

Regional reports

These reports are from individuals within the region and are their particular observations. They are included to give an impression of the present 'state of the industry' and regional activities.

British Columbia, Fraser Valley (Friday, 7/5)

- **Blueberries:** From B.C. Berry Specialist, Mark Sweeney (responding to last week's request for information on the Draper fruit drop problem): "Thanks for the feedback on the Draper drop everyone. No consensus on cause, but seems to be primarily an issue in Whatcom County and Fraser Valley. Some fields are much worse than others with up to 30% drop of seemingly sound, mature green fruit, but with internal browning. Karina and I sampled a number of fields with a range of severity and will have tissue results next week." (Karina is referring to Karina Sakalauskas, the BC Blueberry Council's Research Coordinator. TP)
- **Blueberries and raspberries:** Much friendlier temperatures in the Fraser valley this week giving the plants a chance to recover from last weekend's heat. Lots of sunscald and heat damage particularly in Chemainus raspberry and Duke blueberries. Will see major harvest of Duke next week. Some SWD in first raspberries, but seem to be working through it with protection of subsequent sprays.

Northern Washington, Whatcom County (Friday, 7/5)

- **Blueberries:** Berries here are coming on fast as well. We'll be hand picking Dukes next week and it looks like Bluecrop (first pick) will be ready same time as Duke. And so it begins! East of the Guide, no sign of SWD...as of yet. Yields look above last year, if we can bring them to fruition. (The Guide is referring to the main North-South road running through Whatcom County. TP)
- **Raspberries:** I saw the first flats of our supposedly fresh market raspberries heading to the processing IQF tunnels on Tuesday, 7/3/13. Tough start to the fresh market season.

Northern Washington, Whatcom County (Friday, 7/5)

- **Blueberries:** Blueberries sizing and coloring well, machine harvest still a ways off.
- **Raspberries:** Raspberry picking in full swing, pretty good quality as the heat and wind has dried up the moldy fruit. SWD sprays going on everywhere. Traps not picking up very many adults.
- **Strawberries:** Strawberries mostly done, renovation in progress.

Northern Washington, Skagit County (Monday, 7/8)

SWD trap counts are up so growers are into their 7 day spray rotations to keep the fly in check.

- **Blueberries:** Blueberries should start end of this week or early next week. Looks like the early varieties are all coming on at once with the warm, dry weather.
- **Raspberries:** Local raspberries slated to go into juice for the most part. Some IQF raspberries coming down from Whatcom.
- **Strawberries:** Strawberries pretty much done here, renovation work ongoing.

- **Blackberries:** Excellent bloom in Chester blackberries, should be quite a crop if the labor is available to pick it all.

Eastern Washington (Monday, 7/8)

- **Blueberries:** Eastern Washington harvest is well underway but due to hot weather, the first and second picks are coming off at the same time resulting in very large volumes of fruit being harvested. Some fruit that was to go to the fresh market is being diverted to processing due to the heat. There have been problems with Spotted Wing Drosophila. Labor is adequate and no shortages have been reported. There is a problem with labor quality and there is a high degree of turnover among pickers.

Willamette Valley, Oregon and SW Washington

- **Blackberries:** (Tuesday, 7/9) Marion harvest there was not a big peak like expected. Second pick yields were down from normal, hopefully the third and fourth will make up for it. Most guys are in second pick with some starting third. Some sunburn but not bad. Fruit size is down from the heat last week. Ideal weather for harvest. Field labor is extremely short. Have enough for operating pickers but not enough to do the training that should be done now. Black Diamonds did not take the heat very well, lots of sunburn and smaller fruit. Yields will be down. Third pick done with fourth on the way. Boysens some second picks done but nobody I know of on the third. That's it for now, back to harvest.
- **Blueberries:** (Monday, 7/8) Fruit quality has improved with the temperatures moderating. Just a lot of fruit coming in both for fresh and processed. Rekas, some Duke, Bluecrop, Bluegold, Draper, Spartan, Bluejay, Patriot. Must be the middle of July. Keep those fields watered!

Blueberry development—Western Willamette Valley

Notes:

- *What I've been doing each week is taking four examples from each field and then using what seemed to be the most representative of overall development for illustrating below.*
- [Click here](#) for MSU's growth stage table.
- *The Draper field represented below was being handpicked on the day the photos were taken.*

6-28-13—Week 26 (Bottom)

Patriot
60% blue (more?)

Bluejay
30% blue

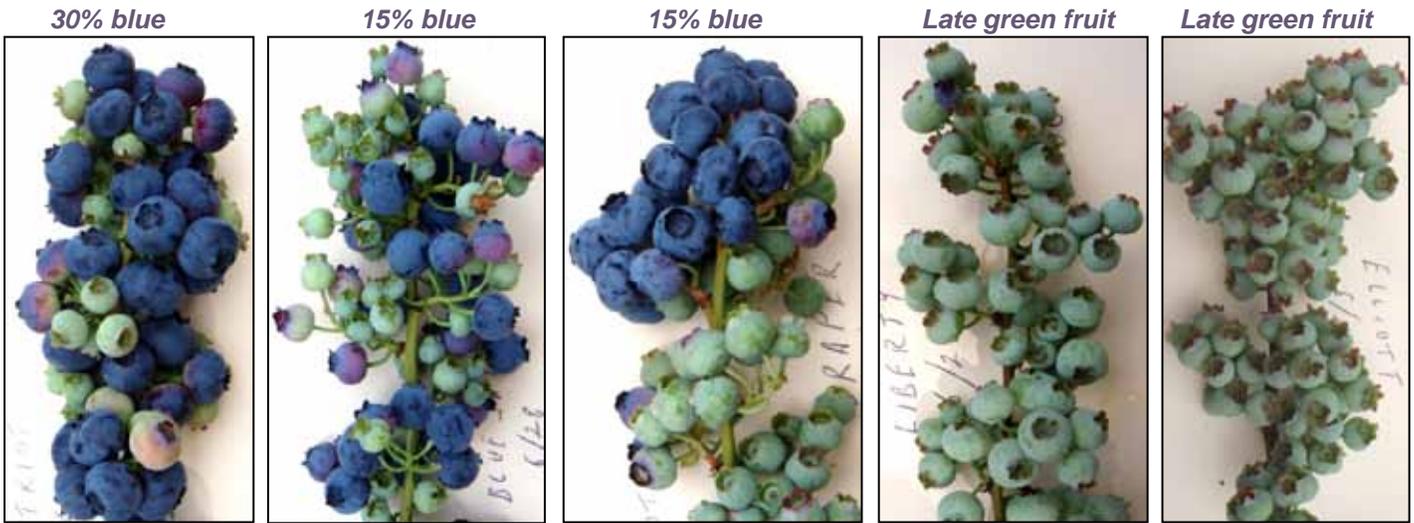
Draper
60% blue (more?)

7-5-13—Week 27 (Top)

Liberty
Late green fruit

Elliott
Late green fruit





Blueberry development—Western Willamette Valley 7-5-13—Week 27
Additional photos



Grower resources

Unusual raspberry fruit contaminant showing up in northwest Washington

- Tentatively identified as egg masses from the Western Tent caterpillar (*Malacosoma californicum*), these are being recovered in some fields.



Photo by Brian Cieslar

Herbicide drift: How to avoid it

- [Click here](#) (7/8, Western Farm Press)

Resources for identifying diseases and insects

- **British Columbia:** [Instructions on how to submit blueberry tissue to the BC Ministry of Agriculture Plant Diagnostic lab for insect or disease testing.](#)
- **For submitting samples to the Oregon State Plant Clinic** [click here.](#)

Maximum Residue Levels (MRL's) for exported berries

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

- [Blueberries](#) (Updated March 11,2013)
- [Caneberries](#) (Updated March 11,2013)
- [Strawberries](#) (Updated February 15, 2013)
- **Recent change**
 - Taiwan now has a Delegate (Spinetoram) tolerance in blueberries of 0.2 ppm. The table has no tolerance listed.

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Spotted Wing Drosophila update for 7-9-13 Week 28

Regional Grower Warning---Continued high risk of economic crop damage to berry crops in Oregon, Washington and British Columbia

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

Alert for Oregon and SW Washington

Larvae have been recovered from some commercial raspberry and blackberry fields in the Willamette Valley. It is strongly recommended that all caneberry and blueberry growers with ripe or ripening fruit immediately implement and maintain through the end of harvest a regular 7 day insecticide application regime for SWD management.

WSU Extension Alert for NW Washington

[Click here](#) for the alert

“SWD larvae have been recovered in red raspberries in Whatcom County and growers should make sure their berries are protected through harvest with 6-7 day applications of effective insecticides. Depending on target markets and stage of ripeness, growers should select among the list of insecticides registered for caneberries in Washington. [Click here](#) for the list. For further information, contact [Lynell Tanigoshi](#), WSU Small Fruit Entomologist. “

BC Blueberry IPM Newsletter for 7/5/13

[Click here](#) for the full newsletter

“The risk of SWD damage to early season blueberry varieties is high. SWD populations are larger than in previous years for this time of year. Larvae have already been found in Fraser Valley raspberries. Trap catches of adult SWD flies have increased in many regions of the Fraser Valley over the past week...All ripening varieties should be protected with insecticide sprays before the first pick.”

SWD information websites

[Peerbolt Crop Management](#)

[Oregon State Univ.](#)

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

[WSU Westside](#)

[WSU Eastside](#)

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

SWD management material resources

Oregon and Washington

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

British Columbia

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

Monitoring berries for SWD larvae

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

1. Collect a sample of fruit to be tested (Caneberries/blueberries: 50 per sample)
2. Put fruit in a gallon size sealable plastic bag.
3. Pour in enough of the salt water solution to allow the fruit to float (solution is: 1 cup of salt per gallon of water).
4. Mark bag with field code/date.
5. For a quick check in the field after a designated period of time (at least 15 minutes), hold the baggie up to light. This helps to see the larvae in the solution.
6. For a more thorough examination, after a designated period of time (at least 15 minutes), pour the fruit and salt solution out into a shallow tray and use a piece of wire mesh screen to hold the fruit down making it easier to separate the larvae from the fruit.

For processors or fruit handling stations:

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

Pest management activities

As fruit colors, implement bird damage management activities: [Birds](#), blueberries.

- [Bye bye birdie – Bird management strategies for small fruit](#) (Cornell) 13 page PDF reviewing options and a nice bird species specific guide to feeding and flying habits.

Time to scout for and treat if needed: [Yellow Rust](#), raspberries.

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.

Time to scout for and treat if needed: [Orange Tortrix Leafrollers](#), raspberries & blackberries (SW Washington and Oregon).

- The larval hatch that, before SWD, caused our major crop contaminant problems has started in area caneberry fields with very small leafroller larvae being found in some fields.
- 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.

Time to treat if needed: [Strawberry Crown Moth](#), southern strawberries.

- We've had some fields recording high SCM adult flight numbers this week.
- SCM adult flight is now in progress in SW Washington and Oregon.
- Treat fields right after harvest for SCM, SWD and Weevils. Correct insecticide timing is essential for SCM. The first application needs to be made 10 to 14 days after two or more adults are caught two days in a row, a second about 14 days later and, if adult flight continues, a third 14 days later.

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

- Infected fruit is now becoming easy to distinguish from healthy fruit in some Oregon fields.
- 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.

Time for preventative fungicide applications: [Alternaria Fruit Rot](#), blueberries.

- Alternaria can infect the fruit beginning at the end of bloom and throughout the fruit development stage, up until harvest. ([Click here for expanded view of this disease.](#))

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

- After harvest, spore masses form rapidly on infected fruit when in cellophane-covered baskets or in plastic clamshell packs. ([Click here for expanded view of this disease.](#))

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

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Additional, ongoing pest information

Diseases

- [Phytophthora Root Rot](#), raspberries.
- [Shock virus](#), blueberries.
- [Blackberry Rust](#), (Phragmidium Rust) Evergreen blackberries.

Insects/Mites

- [Azalea Bark Scale](#), blueberries.
- [Raspberry Beetle](#), northern raspberries.
- Root Weevils, strawberries and blueberries. [Black Vine](#), [Rough Strawberry](#), [Strawberry Root Weevils](#).
- [Blueberry Gall Midge](#), blueberries.
- Mites in raspberries: [Twospotted mites](#) and [Yellow mites](#).

Industry news/resources

Newsletters/ Berry reports

- [BC Blueberry IPM Newsletter](#) (7/5) Weekly by Carolyn Teasdale, [ES Cropconsult](#). Sponsored by the BC Blueberry Council.
- [New Jersey Blueberry Bulletin](#) (7/1) Weekly newsletter by Gary Pavlis, Rutgers blueberry agent.
- [Southern Region Small Fruit News](#) (July Issue) A Collaborative newsletter from six of the Southeastern public university small fruit programs. Lots of stuff including good articles on strawberry viruses and the new thornless primocane fruiting blackberry, 'Prime-Ark Freedom'.
- [The Source](#) (7/8) Marketing report from The Produce News.
- [National Berry Report](#) Daily fresh market berry reports. Hosted by the California Strawberry Commission, this report is generated from data from the USDA Agricultural Marketing Service and is updated daily.

Magazine compilations

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

Recent stories and fresh market pricing for the various berries from *The Packer*.

- Growing Produce: [recent berry articles](#).

Berry research blogs

- [Strawberries and Caneberries](#) by Mark Bolda, UC Davis Berry Extension Agent. **Recent entry: 7/3—Viruses of Strawberry 2013** Reports on recent insect and disease research and observations in California.
- [Team Rubus](#) by Gina Fernandez, North Carolina State Small Fruit Specialist. **Recent entry: 7/3—Gray mold in caneberries** Reports on issues in blackberries and raspberries from the Southeast.

Breeding

- [First thornless primocane blackberry on the way](#) (7/1, Growing Produce)

Regulatory agencies

- [EPA's Pinocchio nose grows with farmer privacy scandal](#) (6/18, Western Farm Press)
- [Farm Bureau files lawsuit against EPA over farmers' privacy](#) (7/8, Ag Professional)

Consumption

- [Consumers turn away from fruits and vegetables in U.S., Europe](#) (7/5, Fresh Fruit Portal)

Hepatitis A Outbreak

- [Turkish pomegranate seeds spread rare virus across U.S.](#) (7/6, Food Safety News)

Pesticides

- [California forces grower to destroy crop for illegal pesticide use](#) (7/1, Growing Produce)

North America

- Prince Edward Island: [PEI blueberry plantings expanding](#) (7/3, Ag Annex)
- [Banner season so far for New Jersey blueberry growers](#) (7/3, CBS Philly)

The West

- Washington: [Larger blueberry crop projected](#) (7/9, Fresh Plaza)
- Washington: [Raspberry harvest off to a warm start](#) (7/1, KGMI Radio)
- California: [Farm water shortages could linger into 2014](#) (6/26, Ag Alert)
- [Southern Specialties prepares for British Columbia deal](#) (7/9, The Packer)

International

- Serbia: [Raspberry crop lower by third](#) (7/2, InSerbia)
- [Argentina works to improve raspberry, blackberry production](#) (7/9, Fresh Fruit Portal)
- [U.N. code focuses on safety of berries, cassava](#) (7/9, Fresh Fruit Portal)

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Event calendar

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

- **July 10 — OSU Caneberry open house** ~ 1-5 pm, [North Willamette Research & Extension Station](#), Aurora. [Click here](#) for details.
- **July 11 — WSU Raspberry Selection Trials Machine Harvest Field Day** ~ 1-3 pm - Honcoop Farm, Lynden WA. Contact [Pat Moore](#) 253-445-4524 for more information.
- **July 11 — WSU Mt Vernon NW Washington Research & Extension Center Field Day** ~ 3:30-6 pm - [Click here](#) for directions.
- **July 12-13 — Oregon Berry Festival** ~ Portland, Sponsored by the Oregon berry commissions as well as many Oregon berry farms and berry related businesses. [Click here](#) for the website with a schedule of events and more details.
- **July 17 — OSU Blueberry field day** ~ 1-5 pm, [North Willamette Research & Extension Station](#), Aurora. [Click here](#) for details.
- **July 19 - 20 — Northwest Raspberry Festival** ~ Lynden, Sponsored by the Lynden Chamber of Commerce. [Click here](#) for the website with a schedule of events and more details.

Crop Work Week 28

All crops

- ***As fruit starts coloring, begin sampling fruit for SWD infestation, continue sampling throughout harvest and treat as needed.***
- Weed management.
- Fertility management.
- Water management.

Blueberries

- ***As fruit starts coloring, begin sampling fruit for SWD infestation, continue sampling throughout harvest and treat as needed.***
- ***Harvest ongoing.***
- Bird management.
- Scout for [mummyberry](#) infected fruit.
- Stay on top of aphid management where scorch virus transmission is an issue.
- Scout for [leafroller larvae](#) and treat as needed.
- Scout for virus symptoms and 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 on leaves and for adult weevils.
- Scout for azalea bark scale in southern fields.
- Scout for blueberry gall midge damage.
- Can use pheromone traps to monitor for leafrollers.
- Scout for berry symptoms like green fruit botrytis, hail damage, mummyberry, etc.
- Can apply clean up insecticide just before harvest for crop contaminant management.
- After petal fall, can treat for alternaria and anthracnose prevention if needed.

Blackberries

- ***As fruit starts coloring, begin sampling fruit for SWD infestation, continue sampling throughout harvest and treat as needed.***
- ***Harvest ongoing in Oregon.***
- Scout for leafroller larvae and treat as needed to prevent fruit contaminant problems.
- Can have pheromone traps out 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.
- Scout for Cane and Leaf Rust.
- Watch for fruit molds and treat as needed.
- Can apply SWD management insecticides.
- Can apply clean up insecticide just before harvest for crop contaminant management.

Evergreen blackberries

- Scout for blackberry rust and treat as needed.

Raspberries

- ***Sample fruit for SWD infestation, continue sampling throughout harvest and treat as needed.***
- ***Harvest ongoing in south.***
- 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 and send in samples for testing as needed.
- Can have pheromone traps out to monitor for leafrollers.
- Scout for Cane Blight and Cane Botrytis symptoms.
- Watch for fruit molds and treat as needed.

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 require 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.

Archived Small Fruit Updates

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

[SFU07-02-13](#) [SFU06-25-13](#) [SFU06-18-13](#)

This document is a guide and not intended as a recommendation or endorsement.
Consult with your supplier, field representative, or pest consultant.

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