

# Small Fruit Update



**Providing Northwest berry growers with the information they need when they need it.**

The Small Fruit Update is sent out weekly during the growing season by [Peerbolt Crop Management](#) and is funded entirely by the Northwest berry growers and industry through their commissions and councils.

May 27, 2015

Week 22

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## Spotted Wing Drosophila Resources

- [Spottedwing.org](#) Information from the 5 year SCRI regional project that just concluded. Cooperating organizations: OSU, WSU, Agri-Foods Canada, UC Davis, UC Berkeley, Peerbolt Crop Management & the USDA.
- [Canada—Spotted-wing Drosophila Technical Working Group](#)
- [USpest.org SWD Extension Documents](#) Many of Amy Dreves' generated SWD materials on managing and monitoring SWD.

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

## SWD—Pest Alert

- This past week we've picked up *Drosophila* larvae in strawberries in both a commercial field and home gardens in the northern Willamette Valley.
- This is the earliest that we've recovered *Drosophila* larvae in strawberries.
- It's consistent with all other indications that berry crops in this region are at a higher risk of damage from SWD infestation than in any previous year.
- [Go here](#) for a one page fact sheet on our strawberry recommendations as of 5/25/15. It covers monitoring, field management, fruit handling & post-harvest considerations.

Tom Peerbolt, SFU Editor

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

## 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](#)

## Regional Open House Field Day Events

- **New Posting: June 4 — WSU Strawberry Field Day.** 1-3 pm. Goss Farm, 15403 Bowman-Hilton Road, Puyallup. "The field day will consist of an informal wander through the strawberry plots. Additionally we will have a chance to talk about the day-neutral strawberry breeding program and see some day-neutral seedlings and selections. It is also an opportunity to discuss directions for strawberry research."

For more information contact [Pat Moore](#) 253-445-4525.

- **June 8 — British Columbia Blueberry Council Field Day.** 12:30-3:00 [Go Here](#) for details.
- **June 10 — OSU Strawberry Open House.** 1-4:30 [Go here](#) for details.
- **July 1 — OSU Caneberry Open House** 1-5:00 Details TBA
- **July 8 — OSU Blueberry Open House** 1-5:00 Details TBA
- **August 18 — Oregon Strawberry Commission Fresh Strawberry Plasticulture Workshop and Demonstration** 9:30-5:00 [Go here for the agenda](#).



## Regional reports

[Go here](#) for the British Columbia Blueberry Council's IPM Newsletter for 5/22.

### British Columbia, Fraser Valley (Monday, 5/25)

Finally, a little rain this morning (Monday 25th) to make all that lately applied nitrogen work in both blues and raspberries. Growth should really surge now in the coming days.

- **Blueberries:** Fruit on the blues is sizing very quickly and evenly. Liberty is an exception. I'm a bit disappointed in the fruit set in most areas that I see this cultivar. It's not like the bees weren't working the bushes either. Also very variable in leaf load. Not sure about this plant for up here. Lots of shock virus this season, but not just on Liberty. With really good bee activity the past two or so seasons, and this one as well, we'll probably really see these virus symptoms escalate in the coming years. We're still on track for quite an early start to pick.
- **Raspberries:** Raspberries are developing quickly as well with considerable fruit formation. I was checking for mites this past week and had to dodge bees constantly as I worked. I don't think I've ever seen such intense pollinator activity in the bushes as I've seen the last week or so. I would think that fruit quality should be quite exceptional if we can avoid wet weather during the pick, which also will be early.

### British Columbia, Fraser Valley (Sunday, 5/24)

Hot and humid describes how we all were, from California to BC. I am not too enthused about this weather, while it does put some meat on the berries, it also encourages all sorts of fungal organisms. Keep irrigation handy....

- **Haskaps:** Haskap now harvested completely in the Eastern Fraser Valley, a VERY early crop. Yield was excellent for a 5 year old planting. Pollination in February and March was superb. Birds loved them way too much. (Here's a recent article on Haskaps: [Haskap berry new crop opportunity for northern farmers. community](#) (May, Ag Annex)
- **Strawberries:** Eastern Fraser Valley now picking strawberries for the fresh market, fruit stands are open for the past weekend already.
- **Raspberries:** I ate my first misshapen raspberry, but the decent fruit on good plantings is still a week away to start turning. Fruit set excellent, large fruit with all drupelets, flowering going very well and set with bees present.

- **Blueberries:** Quite the sizing happening uninterrupted. Nights nice and cool to mild, days in the mid 20s to high 20s (Celsius) doing lots of good. However, water is essential everywhere now. Even in heavy soils, the upper layer of soil is drying out, even saw a dried out organic based soil field too dry. No appreciable rain fall does that.

### Eastern Washington

- **Blueberries:** (Monday, 5/25) Another thunderstorm and an inch of rain Friday night, good for soil moisture but bad for cherry growers. Dukes coloring now and with 90 plus degrees later this week there will be some fresh market next week. Cleanup sprays going on for aphids, leafrollers, and green immigrant weevil.

### Western Oregon, Willamette Valley

- **Strawberries**
  - **Day neutral:** (Monday, 5/24) Nothing like strawberries on Memorial Day, right? Decent fruit quality. Need more pickers.
  - **June bearing:** (Monday, 5/24) Processed harvest of Tillamooks, Hoods and Totems all have started. The cool weather is holding down volume and slowing ripening.
- **Blueberries:** (Monday, 5/24) Sluggish ripening in all regions. A little color showing in some Dukes and other early varieties but not much. Great weather for sizing this big crop that's set though. We'll still be early but not by near as much as originally forecast. Green berry botrytis is very noticeable.

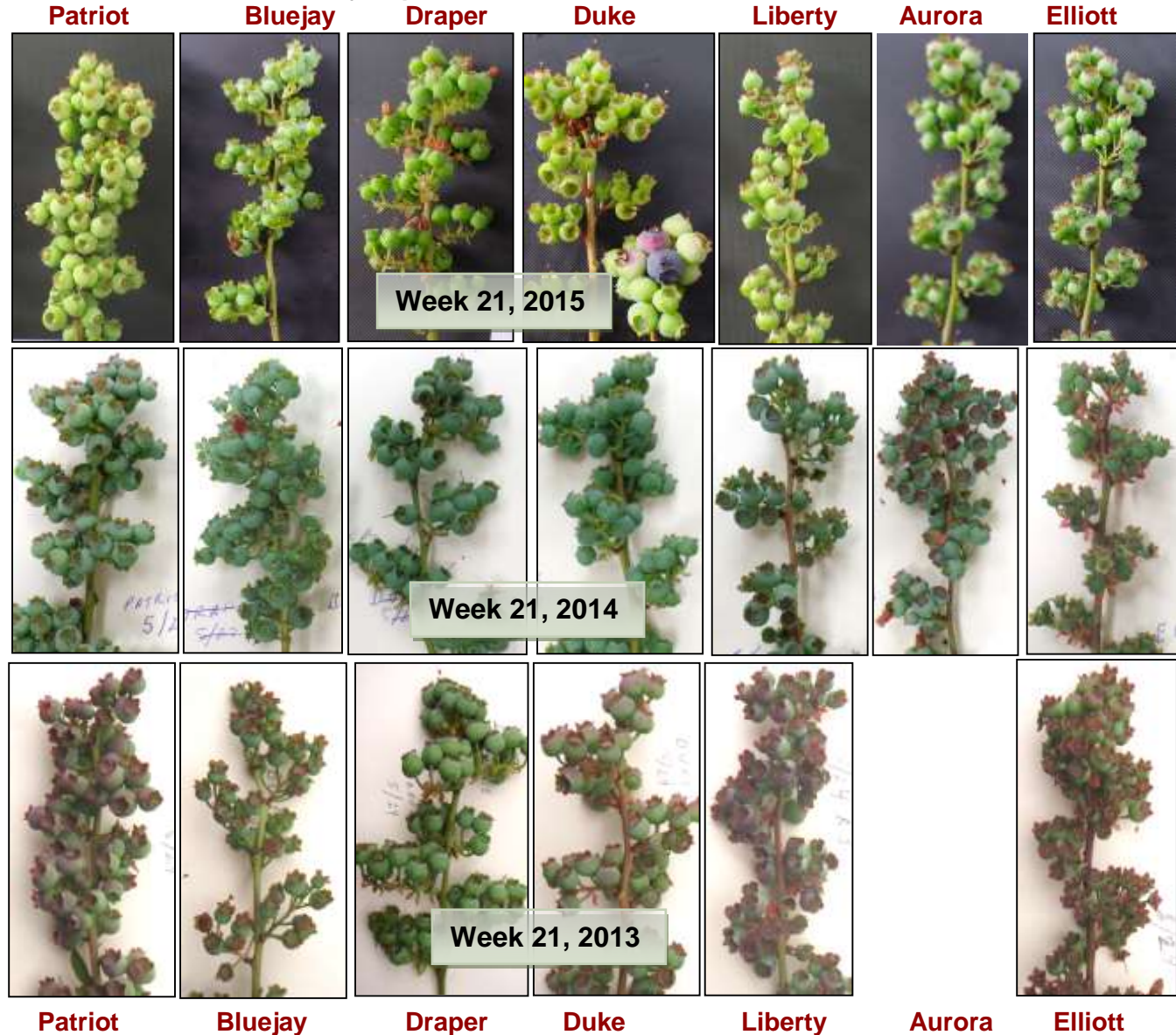
**Blackberries:** *No report this week. Below is Bill Dinger's photo of AY Marions taken on May 19, 2014, near Amity, OR with blueberries farthest away. Wind towers in the blues.*



## Blueberry Bud Development Comparison for the Western Willamette Valley

Protocols for these photos: 1) Each Friday I take 5-7 cuttings from the same fields in the NW Willamette Valley. 2) Later in the day I look over the cuttings and choose what seems the most 'representative' (not the most advanced or the least advanced). I'm aiming for the development stage that best represents the fruit that would be the first harvested. **We continue ahead in development over the last two years although that difference has moderated with the cooler weather. Maybe about a week ahead right now but even that depends on the field in question.**

Northwestern Willamette Valley Top – 5/22/15      Middle – 5/23/14      Bottom – 5/24/13



## Industry news/resources

### Newsletters/ berry reports

- [BC Blueberry Council IPM Report](#) (5/22)
- [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 21](#) (5/25)

### 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: (5/20) Stink bugs in strawberries** *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

- Oregon: [Governor declares drought in 8 Oregon counties](#) (5/22, Capital Press)

#### **California**

- [California farmers strike a deal to cut water use](#) (5/22, Modesto Bee)

#### Legislation

- Oregon: [No-spray buffer requirement added to pesticide bill](#) (5/22, Capital Press)

#### Marketing

- [The war on big food](#) (5/21, Fortune)

#### The West

##### **British Columbia**

- [Strawberry season comes early to B.C.](#) (5/22, Fresh Plaza)
- [Early strawberry crop in Greater Victoria ripe for the picking](#) (5/20, CHEK)

##### **California**

- [Demand for strawberries lightens](#) (5/26, Fresh Plaza)

#### North America

- [Southwest Michigan fruit regional report](#) (5/26, MSU Extension)
- [North Carolina 2014 Season Summary](#) (5/24, N.C. Extension)

#### International

##### **Morocco**

- [Moroccan blueberry boom to take spotlight at IBO summit Down Under](#) (5/22, Fresh Fruit Portal)

##### **Sweden**

- [Frozen berry sales up despite scare](#) (5/25, Fresh Plaza)

##### **Poland**

- [Polish blueberries successful in export market](#) (5/26, Fresh Plaza)

## **Week 22 Grower Resources**

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- [Strategies for maintaining fruit quality in blueberry under water limited conditions](#) ( May issue, Whatcom Ag Monthly)
  - [Solid set canopy delivery system](#) (*Project's website*) *This is a large research project going on with tree fruits but which shares a lot of principals in common with the berry research work on 'mistigation' systems for delivering applications particularly for spotted wing drosophila management. Looks like a very sound approach.*
  - [Bird Management](#): A PCM resources list including companies providing falconry services.

### **Spotted wing drosophila resources**

- [SWD I.D. Card](#) (UC Extension)
- [PCM factsheet on SWD risk factors](#).

#### **British Columbia**

- [Spotted Wing Drosophila \(SWD\) Management in B.C. Berry Crops](#) *last updated 6/24/14.*

#### **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](#)

## 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.

## Pest Alerts

**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

## Pest Alerts

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



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

- Yellow rust is 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**



- 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. Fungicides 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.



*Alternaria fruit rot photos by Caroline Teasdale*

**Preventative fungicide applications: [Anthracnose Ripe Rot](#)**

If you've had problems with Anthracnose, prevention of a recurrence 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](#), 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

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### 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.

## Northwest Berry Nutrient Management Guides

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

## Degree Day Updates

- [WSU Extension—Whatcom County](#)
- [Regional sites—Updated by Len Coop, OSU-IPPC](#) *click on the link, go to right hand column & click on the Degree day icon.*

## Events

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### Upcoming Regional Events & Commission Meetings

[Go here for Full Event Calendar](#)

### Upcoming National & International Berry Events

- **June 18-24 — Eleventh International Rubus and Ribes Symposium** ~ Charlotte & Asheville, North Carolina. [Go here](#) for their website with all the details.
- **September 7-9 — 5<sup>th</sup> 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.
- **New Posting: October 13-15 — 6<sup>th</sup> Biennial Berry Health Benefits Symposium** ~Madison, Wisconsin. [Go here](#) for all the details.

### Archived Small Fruit Updates

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

[21-SFU05-20-15](#)

[20-SFU05-13-15](#)

[19-SFU05-6-15](#)