Strawberry School 2016

UPDATE ON INSECTS AND VARIETIES

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Strawberry Clipper/Bud Weevil

reach 60 °F.

Distribution: Native to North America. Found from Atlantic coast down to Florida. West to Minnesota and Texas and north in Canada.



Photo: M. Conway, 2013

Size: 1/10 inch long. Identification feature: Snout half as long as its body. Two black spots on either side of the abdomen. One spot in center of its abdomen. Activity in spring: When temperatures

Monitoring for presence of Strawberry clipper weevil

Location: Vaughan Farms, Virginia Beach, VA

Four berry rows A-D were chosen, spaced evenly across the width of the plot.

In each row, sticky traps were laid out along with transects placed every 33 ft. across the length of plot.

Each transect was 3.3 ft. long.

Traps were placed in contact with the soil line, near the foliage with least amount of disturbance to the plants as possible

Collected and counted all clipped buds (both on the ground and hanging) in the transect.

Monitoring was continued until the end of growing season.



UrginiaTech





Plot dimensions are 206 ft. long by 199 ft. wide

Woods are on the north end of the plot about 0.75 miles away. The far woods are on the east side of the beds about 3 miles away.



Strawberry Clipper weevil damage



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Dr. Burrack



Small Fruit Program Dr. Samtani



Week	Clippe V	er numb Tirginia B	ers in 20 Beach, N	Total Clipper	Total Clipper	
	_				(40 linear	
	Α	B	С	D	(82.5 linear ft.)	ft.)
4/9	3	0	2	7	12	5.8
4/16	49	19	12	28	108	52.4
4/23	14	8	12	8	42	20.4
4/30	3	4	0	3	10	4.8
5/7	7	12	12	5	36	17.5
5/14	6	10	4	5	25	12.1
5/21	0	1	5	3	9	4.4
5/28	3	1	2	3	9	4.4
6/4	3	1	0	0	4	1.9
6/11	3	1	4	2	10	4.8

Week	Clipper Vi	r numb rginia	ers in 20 Beach, V	014-15, /A	Total Clipper	Total Clipper
	Α	В	С	D	(82.5 linear ft.)	(40 linear ft.)
4/9	1	2	0	2	5	2.4
4/16	3	5	3	9	20	9.7
4/23	9	7	6	4	26	12.6
4/30	0	1	0	2	3	1.5
5/7	0	0	0	0	0	0.0
5/14	0	0	0	1	1	0.5
5/21	0	0	0	1	1	0.5
5/28	0	0	0	0	0	0.0
6/4	0	0	1	0	1	0.5
6/11	0	1	1 Co	pyright, Samtani 20	D16 3	1.5

Virginia Beach, VA	2013	2014
Week	Clipped bud p	per 2 linear ft.
4/9	0.3	0.0
4/16	15.4	2.5
4/23	12.7	24.5
4/30	12.2	11.8
5/7	12.2	4.4
5/14	15.9	0.1
5/21	12.8	0.1
5/28	11.2	0.0
6/4	9.9	0.0
6/11	7.6	0.0

Management Options	Amount of Formulation per Acre	Effectiv eness (+)	REI	PHI	Comments (FRAC/IRAC Code)
bifenthrin (Brigade)WSB	6.4 to 32 oz	+++	12 hr	0 days	DO NOT apply when bees are foraging. IRAC–3
carbaryl (Sevin XLR)	1 to 2 qt	++	12 hr	1 day	If carbaryl is your material of choice for strawberry clippers, Sevin XLR will have a lower impact on bees. Apply material at dusk when bees are not foraging, and allow the maximum amount of dry time before bees become active. IRAC–1A

Sap beetle

Identifying feature: Small, oval and less than 1/8 inch long, mottle brown in color.

Attack ripe and overripe berries. Make a hole on the underside of berries, making a hole straight into the berry.

Population increases with rain. Pesticides are not effective. Cultural control is more important.

Increasing frequency of picking, removing overripe berries, keeping flats away from infested areas and covered.

Larvae damage not appealing.



Stelidota germinata



Sap beetle larvae

Management Options	Amount of Formulation per Acre	Effectivene ss (+)	REI	PHI	Comments (FRAC/IRAC Code)
Cultural Control	Regular, thoro attracted to the Sap beetles overripe fruit o disposed of thorough harve	e sap beetle populations. Sap beetles are ng fruit picked clean will reduce problems. m fields using bucket traps baited with ket lures and culled strawberries must be icide treatments should only be used if ur-own operations or inclement weather).			
novaluron (Rimon) 0.83 EC	12 fl oz	++++	12 hr	1 day	Allow 7 days between applications. DO NOT apply more than 36 fl oz/acre per season. The use of adjuvants or surfactants is prohibited. IRAC–15

Twospotted Spider Mites

- Feed multiple plant species.
- Temperate zone species (greenhouse, deciduous trees) but also found in subtropical zones.
- Difficult to see with naked eye.
- Use 10X or 14X magnifying lens.
- Temperature must be > 54 °F with most rapid development 86 °F.
- Multiple generations per year.
- Regular sampling and monitoring needed. Attn. leaves touching plastic or on borders.
- All or portion of spider mites may enter diapause triggered by cooler temperatures and shorter days.



Univ. of Florida



Eric Erbe, USDA

Damage symptoms

- 1. Stunted plant growth.
- 2. Reduced fruit size and yield.
- 3. Leaves develop yellow speckling on the upper side of leaves.
- 4. Drooping leaves with yellow or purplish discoloration that turns brown.

Control measures

Control achieved by miticide. Avoid use of Sevin, Brigade, or Danitol if predatory mites (e.g. *Phytoseiulus persimilis)*, are used.



University of Florida

Management Options	Amount of Formulation per Acre	Effective ness (+)	REI	PHI	Comments (FRAC/IRAC Code)
Predatory mites (<i>Phytoseiulus</i> <i>persimilis</i> and others)	Release rate release 2 to 3 plant when pe before twosp spider mite p	s vary based u mites per plar opulations are ootted spider m opulations mu	ipon preda nt when m high. Prea nites reach st be follo	atory spo ite popu datory m n thresho wed clos	ecies and prey density. In general, lations are low and 5 predators per nite releases must be initiated at or old levels (5 mites per leaflet), and sely after predatory mite releases.
acequinocyl (Kanemite) 15 SC	31 fl oz	++++	12 hr	1 day	Allow 21 days between treatments. Do not make more than 2 applications per season. IRAC– 20B
bifenazate (Acramite) 50WP	1 lb	++++	12 hr	1 day	Use only 2 applications per year. Use in a minimum of 100 gal/acre. IRAC–UN
spiromesifen (Oberon) 2 SC	12 to 16 fl oz	++++	12 hr	3 days	Make no more than 3 applications per crop. Use in a minimum of 100 gal/acre. IRAC–23

Voles damage: chew off plant roots



Chandler Strawberry 2014/2015

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Ultrasonic Solar Pest Repeller – deterrent for rodents

all in the



New Varieties at HRAREC





Oct. 1, 2015

Oct. 8, 2015



Oct. 1





Oct. 8



Sweet Ann

PLANT CHARACTERISTICS:

Day Neutral High Plant Vigor Open Architecture Low Runner Production High Pathogen Tolerance

FRUIT QUALITY:

Large to Very Large Size Exceptional Flavor Medium Red (High Gloss) - Tip-to-Top Ripening Uniform Long Conic Shape Medium Firmness High Yielding (5.17 lbs/plant)







Input from Dr. Poling on 'Sweet Ann'

- Impressive flavor, stands to it's name.
- Some problem with white shoulders.
- Issues with rain.

I compared these 'Sweet Ann' to 'Camarosa' from Cottle in one photo (Camarosa) in clamshell.

Berries came from a grower's farm in Mt. Olive, NC (Vernon Britt).

Wayne County, NC South of Goldsboro 157 ft elevation







PLANT CHARACTERISTICS:

Short Day / Remontant (multiple blooms) Medium/High Plant Vigor Med Height, Slightly Dense Architecture Low Runner Production Medium / High Pathogen Tolerance

FRUIT QUALITY:

Large Size Good Flavor Medium Red Color Very Firm Moderate Variation in Shape Conic Shape with Few Creases High Yielding (3.92 lbs/plant)





'Scarlet' photo from Dr. Poling





PLANT CHARACTERISTICS:

Short Day / Remontant (multiple blooms) Medium/High Plant Vigor Open Architecture Low Runner Production Medium Pathogen Tolerance - susceptible to *xanthomonas*

FRUIT QUALITY:

Medium / Large Size Good Flavor Slightly Lighter Red Firm Very Uniform Conic Shape Productive Yield (3.08 lbs/plant)





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Ruby June

PLANT CHARACTERISTICS:

Short Day Moderate Vigor (high chill = more vigor) Short, Compact Architecture Moderate Runner Production Medium / High Pathogen Tolerance

FRUIT QUALITY:

Medium Size *Exceptional Flavor* Full Red Moderately Firm Uniform Very Conic - Some periodic tips and crease Productive Yield (2.88 lbs/plant)







Dr. Poling 'Ruby June' may be a very good fit for our region. Of course, we will know a lot more after this spring. We have 1/2 dozen trials across NC, SC and VA with all 4 LCN varieties.'



NC STATE UNIVERSITY

New Genotypes at HRAREC





NCS 10-156

NCS 10-038

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NCS 10-156

Is an early genotype that has uniform fruit with excellent flavor, a rich red color, and consistently good yields. It is a potential 'Sweet Charlie' replacement. It is comparable or better than 'Sweet Charlie' or 'Chandler' in firmness.

NCS 10-038

Is a potential 'Camarosa' replacement with high yields, firmer fruit and more uniform production across the season.





Dr. Fernandez 2016