LOF Virtual Spring Petal Fall Thinning Recommendations Meeting - Part 1

May 27st, 2020
Noon – 1 PM

Welcome- Craig Kahlke, Team Leader, CCE Lake Ontario Fruit Program

- Zoom Basics
- Today's Sponsor
- Presentation/Recommendations from Dr. Terence Robinson, Cornell University
- Additional Info from Mario Miranda-Sazo, CCE-LOF
- Q & A

Cornell Cooperative Extension | Lake Ontario Fruit Program

Zoom Basics

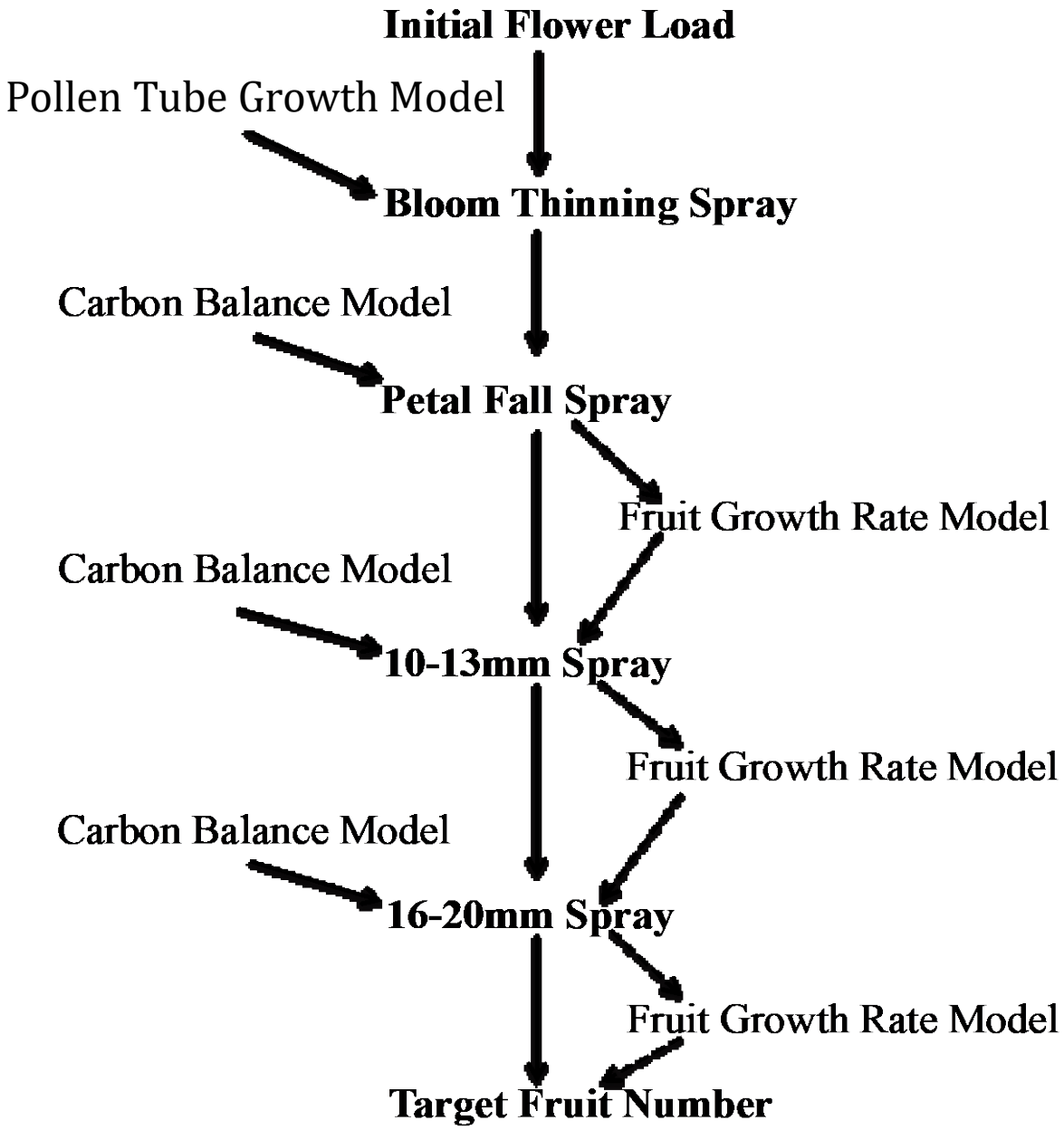
Please be sure you are muted.

You can ask questions at any time during the presentation in the Q+A window. We will address all your questions at the end of the presentation.

Our Sponsor for Today's Webinar

VALENT USA & VALENT BIOSCIENCES

Steps in Precision Chemical Thinning



Chemical Thinning Options

- Bloom
  - Ammonium Thiosulfate (ATS) 2.5%=2.5 gallons/100 gallons
  - Lime Sulfur and Oil
  - Promalin
  - Maxcel
  - NAA (10ppm=4 oz/100 gallons)
  - Amide-Thin
  - Regalia
- Petal Fall (fruits at 5-6mm)
  - Sevin
  - AmideThin
  - Maxcel + Sevin
  - NAA + Sevin
  - Maxcel + NAA
- Fruits at 11-13 mm
  - NAA + Sevin
  - Maxcel + Sevin
  - Maxcel + NAA
- Fruits at 15-20 mm
  - NAA + Sevin
  - Maxcel + Sevin + Oil
  - Ethrel + Oil

Bloom Thinning for 2020: A look back

- The Pollen Tube Growth Model indicated Friday, Saturday or Sunday for ATS
  - Retreated Sunday or Monday
- So far the ATS sprays appear to have given little thinning

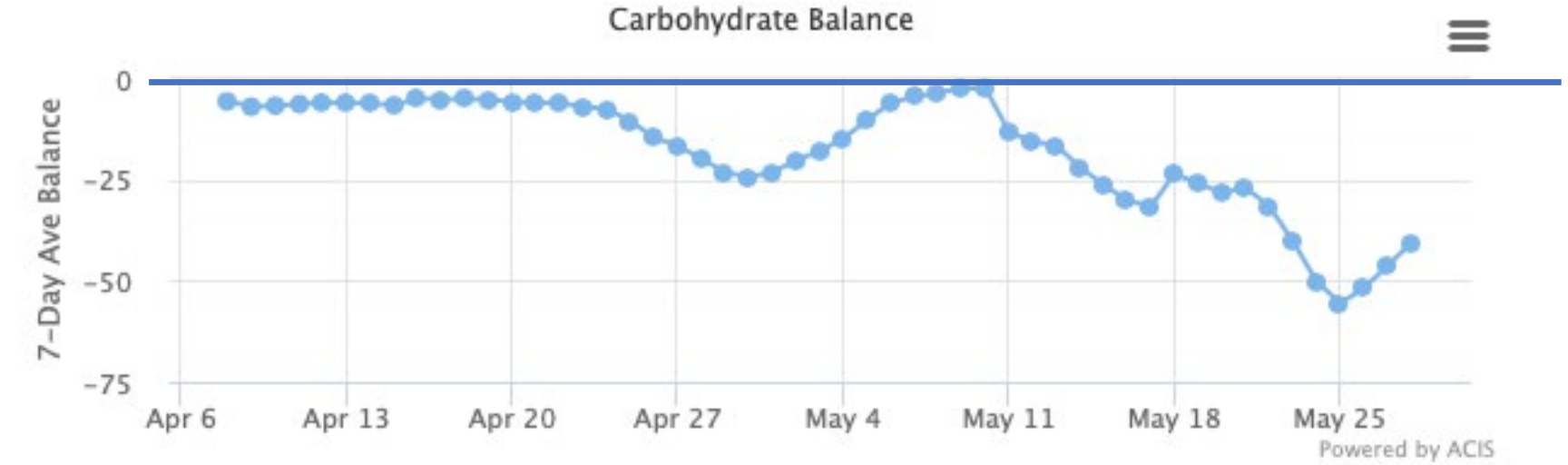
Post-Bloom Thinning for 2020:

- Despite frost damage in some blocks, there appears to be a very strong set in Wayne County and in much of Orleans and some of Niagara County
- The petal fall spray is an essential component of this years thinning program.
  - In blocks with king flowers and a strong set a full dose of either NAA+Sevin or Maxcel+Sevin is needed
  - In blocks with mild king damage, but with strong set of lateral flowers a full dose of either NAA+Sevin or Maxcel+Sevin will do a good job of thinning
  - In blocks with severe damage and only moderate set, a spray of just Sevin is suggested
- Use the degree day calculator in the carbohydrate model to target the best time for thinning.
  - Spray petal fall thinners when DD=100-125.
  - Spray the 12mm thinners when DD=200-250 DD
  - Spray Rescue thinner between DD=300-350

Post-Bloom Thinning for 2020:

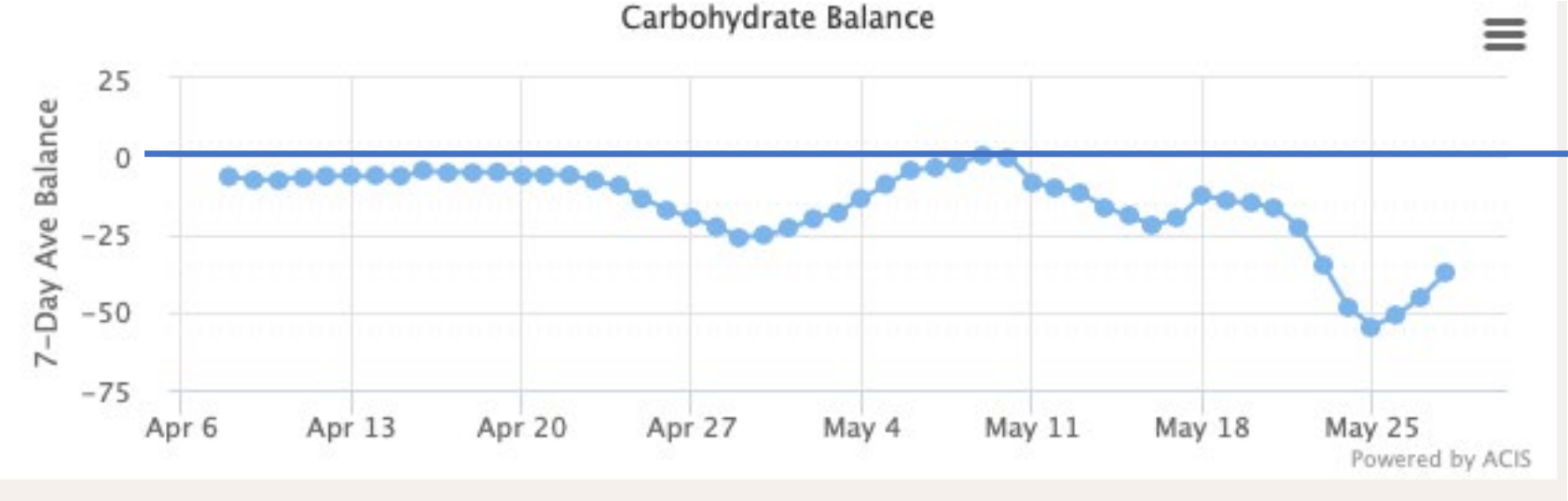
- Use the carbohydrate model to avoid over-thinning
  - Both a Web-based version and a mobile phone version (MaluSim) are available
  - Don’t spray when carbohydrate deficits are -60 or less
- At petal fall, all thinners have a moderate effect and are thus very safe. (There is little risk of over-thinning)
- Pick a window with some deficit in the next few days to apply your petal fall spray

Carbohydrate Balance – Williamson NY, May 27, 2020



	Max.	Min.	Radiation	Daily Deficit	Av Deficit	DD	
5/23	76	55	24.5	-32.62	-40.21	14.8	Apply Standard Chemical Thinning Rate
5/24	82	53	24.4	-27.97	-50.1	30.2	Apply Standard Chemical Thinning Rate
5/25	84	62	25.2	-35.95	-55.55	49.0	Apply Standard Chemical Thinning Rate
5/26	90	63	26.7	-57.06	-51.86	69.6	Apply Standard Chemical Thinning Rate
5/27	85	65	16.7	-83.29	-46.33	89.4	Apply Standard Chemical Thinning Rate
5/28	78	66	11.8	-95.94	-40.59	107.7	Apply Standard Chemical Thinning Rate
5/29	77	56	18.9	-56.04	-	122.8	-
5/30	67	48	24.4	-6.77	-	133.0	-
5/31	60	47	25.6	10.75	-	140.9	-
6/1	62	49	26.1	4.24	-	150.0	-

Carbohydrate Balance – Albion, NY, May 27, 2020



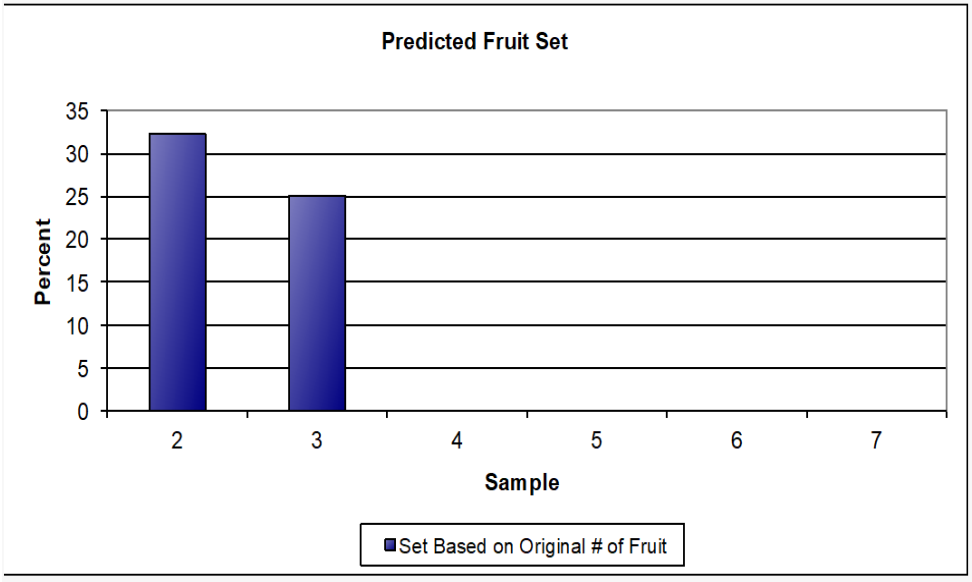
	Max.	Min.	Radiation	Daily Deficit	Av Deficit	DD	
5/23	76	54	24.0	-20.02	-35.21	14.5	Apply Standard Chemical Thinning Rate
5/24	81	57	23.4	-22.85	-48.54	31.0	Apply Standard Chemical Thinning Rate
5/25	82	66	26.5	-44.69	-54.6	50.3	Apply Standard Chemical Thinning Rate
5/26	85	63	26.8	-58.8	-50.92	69.7	Apply Standard Chemical Thinning Rate
5/27	81	66	13.0	-95.83	-45.21	88.8	Apply Standard Chemical Thinning Rate
5/28	77	64	10.8	-94.41	-37.53	106.2	Apply Standard Chemical Thinning Rate
5/29	76	53	19.3	-45.59	-	120.2	-
5/30	64	47	25.1	5.71	-	129.3	-
5/31	61	45	25.0	17.12	-	136.9	-
6/1	64	47	25.7	9.07	-	146.0	-
	Text color represents expected thinning efficacy: Blue=Mild; Green=Good; Orange=Very good; Red=Excessive						

Petal Fall Spray Suggestions for 2020:

- Best petal fall spray timing based on DD is forecasted to be
  - Thursday May 28 – Saturday May 30
- Suggestions
  - Thursday and Friday with temperatures in the mid 80's and a daily deficit of -90 and a 7 day average deficit of -40 are perhaps the best days if you want aggressive thinning.
  - Rain may complicate Thurs. and Fri. (We need 8 hours between application and any rain)
  - Saturday with temperatures in the mid 70's and a daily deficit of ~-40 is perhaps the best day if you want mild thinning.
  - With either timing use the normal rate of
    - 7.5ppm (3oz) NAA + 1 pt/100 of Sevin on Honeycrisp, Gala and Snapdragon (mature)
    - 5ppm (2oz) NAA + 1 pt/100 of Sevin on McIntosh
    - 5ppm (2oz) NAA with no Sevin for Cortland
    - 64oz Maxcel/100 DTRV + 1-2pt Sevin per 100 gal will likely thin well in 2020
- It is <u>possible</u> with both bloom thinning and petal fall thinning a near perfect thinning may be achieved in 2020

To assess the effectiveness of the bloom and petal fall sprays use the Fruit Growth Rate Model

SUMMARY			Variety, Strain							0	2007
			Treatment					0	Block	1	
Sampling			Diameter (mm)			Number of Fruit			Predicted %		
Number	Date	Days between sample dates	Mean of all measured fruitlets	Mean growth of up to 3 fastest growing fruitlets per tree	50% of fastest growing fruitlets	>50% fastest	<50% fastest	Measured	Set Based on Original # of Fruit	Drop Based on Original # of Fruit
1	5/25	0	6.49					471		
2	5/29	4	8.16	4.90	2.45	152	208	360	32.3	67.7
3	6/1	3	9.38	4.14	2.07	118	191	309	25.1	74.9
4				0.00	0.00	0	0	0	0.0	100.0
5				0.00	0.00	0	0	0	0.0	100.0
6				0.00	0.00	0	0	0	0.0	100.0
7				0.00	0.00	0	0	0	0.0	100.0



Take-Home Suggestions for petal fall 2020:

1. Assess each block and each variety.
   - If king flower are mostly missing then thin with low rates but don't be afraid of the petal fall timing since it is very safe.
   - If most kings are present utilize the heat of tomorrow and Friday and full rates to get great thinning.
2. Chemically thin using the "Precision Thinning Program"
   1. Apply a petal fall thinning spray at 100-125 DD.
   2. Assess response by measuring fruitlet diameter and using the fruit growth rate model.
   3. If necessary, apply a thinning spray at 12-13mm (200-250 DD).
   4. Re-assess response with Fruit Growth Rate Model.
   5. If necessary apply a thinning spray at 18-20mm (300-350 DD).
3. Where there has been frost damage, apply no thinner to the bottom half of tree.
4. Don't use surfactants like Regulaid or Oil.

To know how good of a thinning job you did with Bloom and Petal Fall Sprays----

- Measure fruitlets 3 days after the petal fall application and 8 days after the petal fall application and use the Fruit Growth Rate Model
- Send me the data and I will help interpret and give you further suggestions.


Thank You for Your Attention
Questions?
Irrigation.