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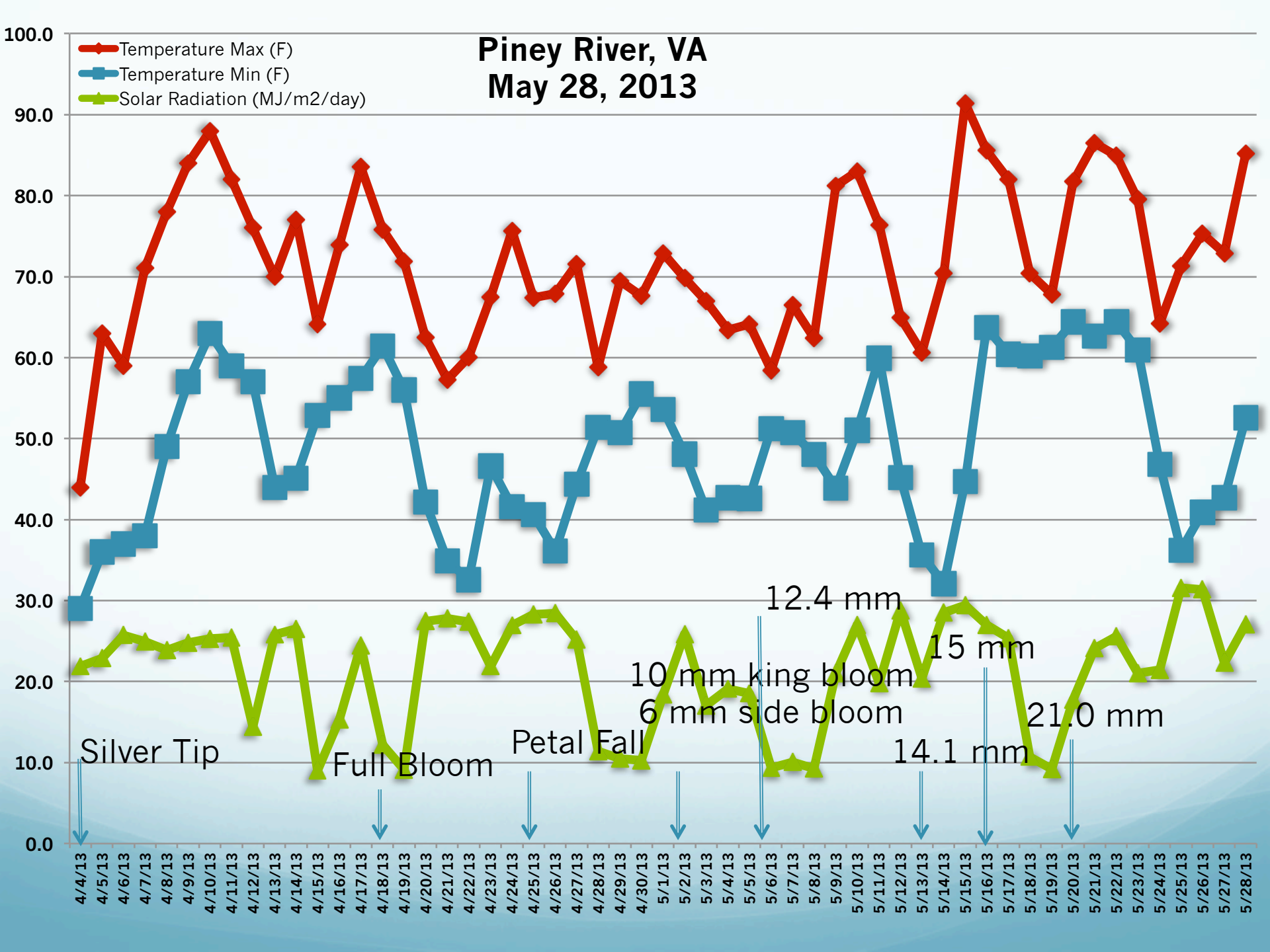
MaluSim Carbohydrate Model*

Simulation location: Piney River, VA (Central Virginia Fruit Growing Region)
Simulation date: May 29, 2013

Greg Peck

*Developed by Drs. Alan Lakso and Terence Robinson, Cornell University


Piney River, VA
May 28, 2013
Temperature Max (F)
Temperature Min (F)
Solar Radiation (MJ/m2/day)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Silver Tip
Full Bloom
Petal Fall
10 mm king bloom
6 mm side bloom
12.4 mm
15 mm
14.1 mm
21.0 mm
4/4/13
4/5/13
4/6/13
4/7/13
4/8/13
4/9/13
4/10/13
4/11/13
4/12/13
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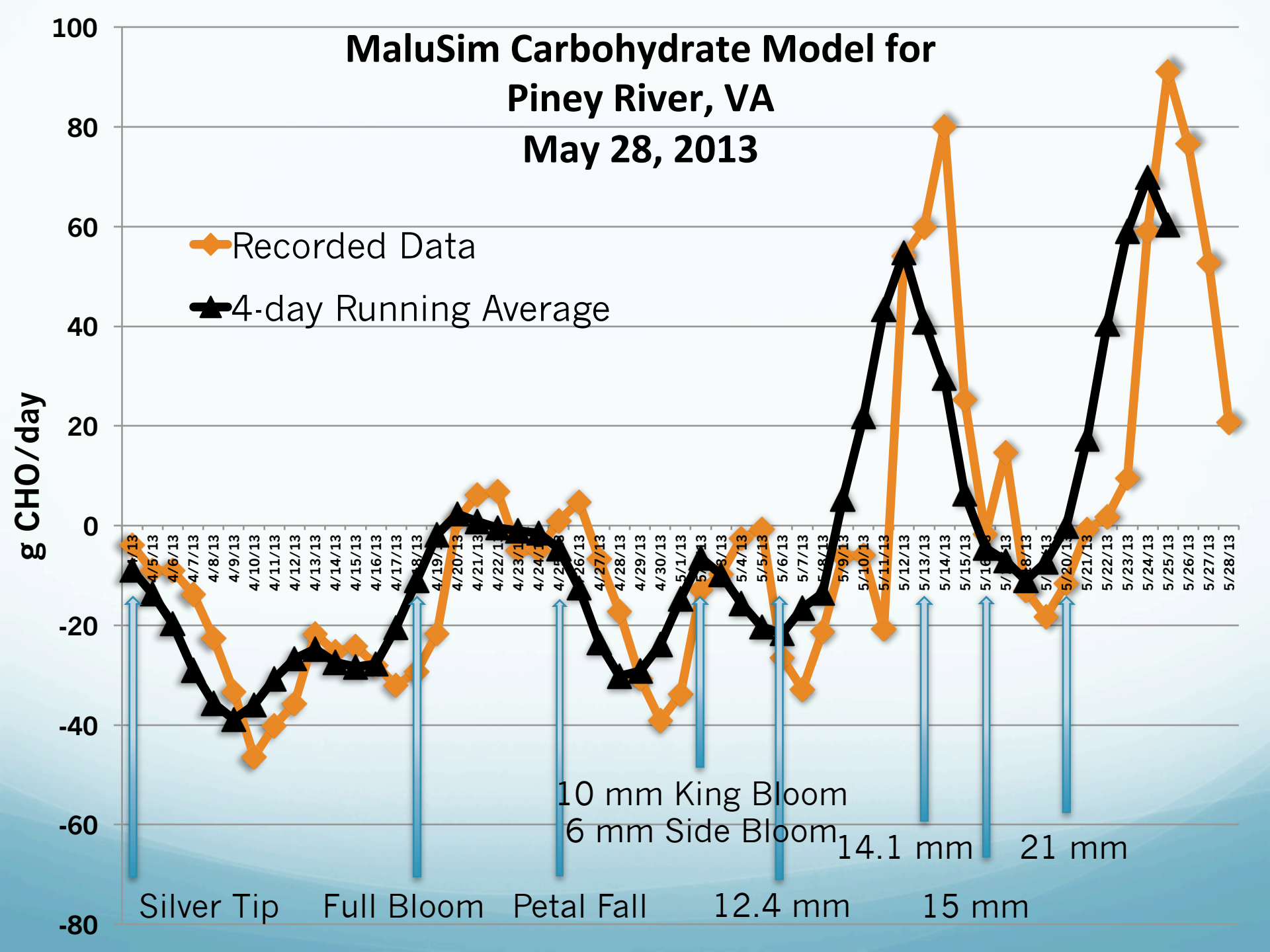
MaluSim Carbohydrate Model for
Piney River, VA
May 28, 2013
Recorded Data
4-day Running Average
g CHO/day
100
80
60
40
20
0
-20
-40
-60
-80
10 mm King Bloom
6 mm Side Bloom
14.1 mm
21 mm
Silver Tip
Full Bloom
Petal Fall
12.4 mm
15 mm

Interpreting the MaluSim Model: look for three-to four-day trends

Thinning Index	Recommendation
>20 g/day	Expect little or no response to normal rates of chemical thinners. You will need to thin more aggressively than normal
+20 to -20 g/day	Expect normal thinning responses to standard rates of chemical thinners
-20 to -40 g/day	Expect normal to slightly aggressive responses to standard rates of chemical thinners
-40 to -60 g/day	Expect aggressive responses to standard rates of chemical thinners. Consider reducing rates to avoid over thinning
-60 to -80 g/day	Expect very aggressive responses to standard rates of chemical thinners. Reduce rates to avoid over thinning
< -80 g/day	Standard rates of thinners will result in severe over-thinning. Reduce rates by at least 50 percent.

(Table developed by Dr. Steve McArtney (NCSU). Additional input from Drs. Alan Lakso and Greg Peck)

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We are a collaborative team of Extension specialists and agents who deliver year-round programming for the Commonwealth's tree fruit producers. We provide our stakeholders with the latest research-based information for making sustainable management decisions on their farms. We also develop resources for beginning farmers and home fruit enthusiasts.

Our information is disseminated through this website, Extension publications, workshops, on-farm meetings, and one-on-one conversations.

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Virginia Tech Tree Fruit Extension and Outreach shared Virginia Beginning Farmer & Rancher Coalition's status update.

Virginia Beginning Farmer & Rancher Coalition

Synthesis In Agriculture Education

Past updates: disease | pest management | horticulture

Commercial tree fruit production updates

05/28/2013

Accumulated wetting hours for the sooty blotch/flyspeck threshold

From: Tree Fruit Disease Update

For purposes of predicting the development of the sooty blotch and flyspeck (SBFS) fungal complex, we record accumulated wetting hours, starting 10 days after petal fall. This year we have settled on May 3 as our petal...

05/24/2013

Scab and rust infection period May 23-24

From: Tree Fruit Disease Update

We recorded another apple scab and cedar-apple rust infection period at our AREC May 23-24: 14 hours wetting with 0.8 inches of rain at 56-64°.

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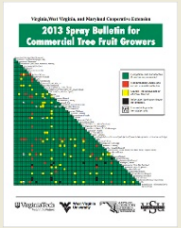

2013 Spray Bulletin for Commercial Tree Fruit Growers

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Suggestions for late thinning and return bloom applications

Posted on May 21, 2013 by gmpeck

By this time, apples in most of Virginia are 13-20 mm in fruit size. Once apples reach this size, the trees tend to be less responsive to the typical 10 mm (carbaryl plus NAA or 6-BA) applications. However, if additional thinning is needed, growers can still use ethephon (sold under the trade names Ethrel and Ethephon 2). Ethephon is most effective when fruit size is 14 to 28 mm in diameter. In most years, it is difficult to chemically thin apples larger than 24 mm.

Ethephon has variable responses due to air temperature and humidity, as well as spray water volumes. Overthinning is more likely with this material than with other thinners. For this reason, ethephon has been primarily used when earlier thinning applications were not successful, on very difficult to thin cultivars, and/or when return bloom has been a severe problem. Thinning results with ethephon varies amongst cultivars. Ethephon is not very effective on Gala, but it is very effective on Golden Delicious and Rome. Where water is alkaline, buffering the spray solution to a pH of 3 to 5 will increase chemical stability and effectiveness. Do not use before a light rain or dew or when post-application temperatures are predicted to be greater than 90°F because excessive thinning may occur.

Ethephon is usually combined with carbaryl or oxamyl (Vydate L). For greater thinning activity, ethephon can also be tank mixed with NAA and/or spray oil.

I have several research trials underway to look at alternative and hopefully more consistent late thinning materials. However, at this time, ethephon is still the standard material when fruit size is greater than 14 mm.

Once fruit is larger than 28 mm, hand thinning will need to be used to remove additional fruit. Hand thinning will have a positive impact on final fruit size and return bloom for up to about 45 days after full bloom. In 2013, this is around the first week of June for central Virginia and the second week of June for the Winchester area.

PROMOTING RETURN BLOOM IN APPLE

Ethephon (sold under the trade names Ethrel and Ethephon 2) can promote flower bud formation when applied from petal fall to about 6 to 8 weeks after full bloom. The greatest effect is from applications made 0 to 4 weeks after bloom. However, since ethephon can cause substantial fruit thinning, multiple weekly applications at rates 1/2 that of the thinning rate are recommended starting when fruitlets are greater than 30 mm. When possible, it is best to wait until after "June" drop has occurred. At a minimum, wait 7-10 days after the last thinning application

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- Commercial Tree-Fruit Production Meetings for May 15 and May 16

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Email: greg.peck@vt.edu

Twitter: http://twitter.com/VTechPeck