

March 30, 2000

**Strawberry Information****NC Strawberry Weekly Update - March 30, 2000**

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**Weather:**

This week we have again experienced very cool day temperatures in the low 60's and nights in the 40's with substantial precipitation on Monday March 27th (Clayton recorded 0.61 inch, 68 F max, 45 F min). We experienced 14 hours of continuous wetness on Monday (research has shown that more than 16 hours of wetness is required for a substantial incidence of botrytis infection at 50 F). Conditions have been improving through the mid-week, and we enjoyed clear, but cool conditions yesterday (only reaching upper 60s at Clayton). Near the late afternoon and early evening the winds finally calmed down to allow for better field spraying conditions.

**Crop ripening:**

The relatively cool conditions of the last two weeks have contributed to a more gradual crop development cycle. We know from past years of experience that the number of days from open bloom to red ripe fruit averages 27-28 days, and at this point I would project that we are potentially looking at 30 or more days. We have some information on crop forecasting for interested agents and growers. In fields visited yesterday in the upper coastal plain there were a "few berries getting ripe" of the Sweet Charlie variety. Our crop at Clayton is on a later schedule this year, and we don't expect any real picking until about the third week of April this year (a week later than normal). We are just now seeing some of our highest quality flowers on Chandler, and these will not be picked until the very end of April. Typically, the first week of Chandler is very rough fruit, and this year will be no different (so, don't over commit yourself that first week).

A Case Where We Monitored Irrigation Scheduling at Clayton and Produced 15 + Tons/A: (from Dr. Gordon Miner's talk in Chesapeake VA, March 25)

A. Drip tape: 0.4 gal/min/100 ft

B. 1 acre of strawberries on 5 ft row centers = 8712 linear ft of row

C. 0.4 gal/min/100ft x 60 min/hr = 24 gal/hr/100 linear feet

D. 24 gal/hr/100 ft x 8712 ft = 2091 gal/hr/acre

E. Since the water is applied only under the plastic mulch, which occupies 50% of the area, the rate under the plastic is  $2 \times 2091$  gal/hr/acre = 4182 gal/hr/acre under plastic

F. Since 1 inch of water on 1 acre = 27,512 gal, the amount of water applied under the plastic =  $(4182 \text{ gal/hr/acre}) / 27,512 \text{ gal/in} = 0.15 \text{ in/hr/acre}$  (This is = 0.075 in/hr/acre on a whole field basis)

G. We ran the system a total of 37.25 hours in spring 1999 to apply fertilizer and irrigate over 8 weeks (mid April - mid June). Thus, we applied  $37.25 \text{ hr} \times 0.15 \text{ in/hr/acre} = 5.6$  inch of water under the plastic

H. Over 8 wks, the mean weekly rate was 0.7 inch under the plastic. This required an average of 4.7 hr of irrigation per week ( $0.7 \text{ in} / 0.15 \text{ in/hr/acre}$ )

I. We irrigate when the tensiometers (8 in deep) reads 20 to 25.

Elevate usage (interview with Mike Allan, TomenAgro, San Francisco)

Growers have been requesting information recently on how best to utilize Elevate in a Botrytis management program, and their questions have related to: 1) adjusting product usage amounts for the proportion of the land area that is actually covered with plasticulture; 2) spray gallonage per acre; 3) the possible effectiveness of this product on other diseases; 4) whether a surfactant is needed to increase it's effectiveness, and a number of other important questions. I managed to have a very informative discussion in mid-March with Mike Allen, Biological Development, TomenAgro, San Francisco, CA ([www.tomenagro.com/](http://www.tomenagro.com/)), and here on some guidelines he provided for Elevate usage.

1) Adjusting the product usage amount based on proportion of the land area that is actually covered with strawberries on plastic - essentially, the label states that the application rate for fenhexamid (Elevate) 50 WDG is 1.5 lb/acre. This is for a broadcast application. However, if a banded application is made, it is not necessary to use this much product per acre. With strawberries on the plastic mulch beds covering approximately 50% of an acre, it is possible to reduce your product usage in half with a band application over the strawberry plants only (not wasting product on the aisles). The key, of course, is to apply the same chemical concentration whether you spray broadcast or band apply. With strawberries on the plastic mulch beds covering 50% of an acre, you can use 0.75 lb of material to apply the same amount of active ingredient as a broadcast application to a full acre @ 1.5 lb of product.

2) Spray gallonage - the label, according to Mike Allan does not actually specify how many gallons of water per acre are needed. The label was written this way to give the producer some flexibility. With a large canopy, such as we typically get for Chandler and Camarosa in the early spring, it is suggested the 100 gallons per acre (broadcast) may be necessary for complete coverage.

3) Surfactant - according to Mike Allan, there is NOT a need to use a surfactant with Elevate.

4) Hold fast period - according to Mike, Elevate becomes "locally systemic" soon after application. He indicated that about 58% of the material has moved into the waxy cuticle and leaf tissue within the first hour after application.

5) Elevate is a good a stand alone product for Botrytis, but it will not be effective for any other diseases. Mike mentioned that it is possible to tank mix Elevate with other with other products such as Captan. If you use more than one pesticide formulation in a spray tank, remember that dry materials (WP) go into the spray before dry flowables (DF) or water dispersible granules (Elevate) - NC Ag Chem Manual p. 30.

6) Strategies to minimize the potential for resistance buildup - in the NC Ag Chem Manual it states, "Avoid making more than two consecutive applications of Elevate, and use two other Botryticides for two applications before reapplying fenhexamid." In Florida, growers typically use Elevate at the beginning of each flowering cycle (usually have 3 crop cycles) and then follow Elevate with other Botryticides.

7) Interval - a 7 to spray 14 day interval is recommended, dependent on weather and disease pressure.

Other important information:

a) You can obtain a "Specimen Label" for Elevate (toll free 877-44-TOMEN)

b) Also, ask for the Technical Information Bulletin, " Controlling Gray Mold with Elevate 50 WDG Fungicide".

Tomorrow (Friday)

Plan on attending the March 31st Strawberry Tour being led by agents Milton Parker and Charlie Lowry - assemble at 8am, Robeson Co. O.P. Owens Ag. Center, Lumberton (Charlie Lowry has promised us a drier tour than last year!) Phone 910-671-3276

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