

April 27, 2000

## Strawberry Information

### NC Strawberry Update - April 27, 2000

General roundup - A cool, wet weather pattern has settled into the state and continues to frustrate strawberry harvest operations across the CP, Sandhills and Piedmont. These same conditions are also producing very high botrytis pressure. Plastic mulch beds give us a huge advantage in dealing with botrytis (compared to the matted row bare-ground beds where losses to botrytis would be staggering under these conditions), but a spray program is still very much needed! However, please do not overlook the benefits of a good sanitation program during the harvest to reduce inoculum levels: a) close picking intervals, and b) removal of infected fruits (toss into aisle). According to my latest weather update, we can expect (Raleigh):

Thursday - 64/46 (daily max/min temp) and times of clouds and sun

Friday - 68/46 and variably cloudy, showers possible

Saturday - 66/44 and mostly cloudy with showers

Sunday - 68/48 and clouds breaking for some sun

So, whatever happened to the rule that, "If you don't like the weather today (in NC), just come back in 3 days"?

Prices are very weak on the wholesale market for strawberries right now - California has once again flooded the eastern markets. Though early season returns for local fresh market berries can be attractive (\$11-12/flat), these prices eventually crumble when California hits a peak supply volume (as they have now). I spoke with an eastern NC producer (very rural area where PYO not an option) and THEY WERE ONLY BEING OFFERED \$7/FLAT.

Someone said at a winter meeting in early March that California is our main competition. This is true in the sense that they profoundly impact (and control) fresh wholesale prices (prices paid by the supermarkets). But, growers here will never survive a head-to-head (flat-to-flat) competition in the fresh market with California. They know the ropes of fresh marketing, they also have the better climate and yields. And, with such an extended harvest season they can make-up for low price periods in the spring with higher prices in the summer. We don't have that option (of summer fruit) in our climate.

We make-or-break in just 4-5 weeks. With the prices being paid this week by the supermarkets, we break. We can only survive by growing a more flavorful strawberry than California and then by direct marketing this fruit DIRECTLY to the public. A pick-your-own/ready pick grower stays in business because he or she is able to stick with a reasonable direct market price for the whole season.

We have had this discussion before, but are we really spending the advertising dollars needed to bring about enough consumer awareness for NC (an other regionally grown) strawberries? By comparison to strawberry growers in the U.K., our advertising expenditures here are quite modest.

MAIN THEME OF THIS WEEK'S ADVISORY - GRAY MOLD! (Thanks to Dr. Frank Louws for his contribution to this section)

In this week's advisory our goal is to get everyone on "the same page" regarding the availability and correct use of our currently registered fungicides for gray mold in strawberries - we had several agents and growers raise questions about the various options we have for gray mold control last week.

Currently registered fungicides for gray mold control include Captan, Rovral, Benlate, Topsin-M, Thiram, and Elevate (recently registered). Please pay special attention to the restrictions on Rovral and Benlate. It is also very important: a) not to make more than two consecutive sprays of Elevate, b) not to use more than 6 lbs of product per season, and c) an alternative product needs to be used for 2 applications before Elevate can be used again.

1. Captan is a good broad spectrum product and has historically been the key fungicide used in strawberry production. It provides protection against a wide range of diseases including gray mold, anthracnose fruit rot and some foliar diseases.
2. Rovral - the label for Rovral has changed. Growers have used Rovral during bloom and during harvest time. It is now illegal to use "after first fruiting flower" and can be used for one application per season. Therefore, Rovral is effectively not available for fruit rot management but could be used for a fall or early spring spray where Botrytis crown rot may be a problem.
3. Benlate cannot be used once a commercial operation has been turned into a "U-Pick" or "Pick-Your-Own" operation (this appears to be due to a skin rash that may develop for some customers).
4. Topsin-M is a sister product of Benlate and has the same effective ingredient. Based on research we (Dr. Louws) have conducted, a significant proportion of the Botrytis population is resistant to Benlate/Topsin-M, However, in field trials with Topsin-M, there was benefit using this product for a maximum of 2 applications during the season.
5. Thiram is similar to Captan, a broad-spectrum protective fungicide.
6. Elevate was recently registered and is very good for gray mold management but will not control any other disease problem.

Key principles to keep in mind when developing a fungicide spray program are: Captan is broad spectrum but not highly efficacious; Benlate or Topsin-M should always be tank-mixed with e.g. Captan and are likely to be of economic benefit for a maximum of 2 applications per season; Rovral is illegal to use during bloom and harvest; Elevate is good for gray mold control but cannot be used more than 2x in a row.

A highly conservative approach is as follows ( most parts of the state are now at No. 4 stage)

1. Initiate a first spray during early bloom (10%) using Captan + Topsin-M or Captan + Benlate.
2. For the second and possibly third application at weekly intervals, use Elevate.
3. During a "full-bloom" situation (possibly the third or fourth application), apply the Captan + Topsin-M or Captan + Benlate tank mix.
4. For subsequent applications, alternate Captan 2x and Elevate 2x. Modifications of this approach would be to reduce the frequency of applications during warm-dry weather and tighten up the frequency during cooler-wet periods and according to the key principles outlined above.

Additional information on Elevate usage (from March 30th advisory)

7 Pointers for Elevate Fungicide 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 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 (AT HARVEST THIS APPLIES - HIGHER GALLONAGE).
- 3) Surfactant - there is NOT a need to use a surfactant with Elevate.
- 4) Hold fast period - 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. 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".

Special Note on Anthracnose:

It is important for all growers to note that Quadris is NOT AVAILABLE to NC strawberry growers (it was under emergency registration until April 12, 2000).

If you suspect a problem with anthracnose, please contact your agent to have samples sent to the Plant Disease and Insect Clinic asap.

p.s. Thank you for the very positive notes back regarding the utility of this electronic newsletter - the response was really overwhelming! I look forward to sharing your comments with my administration in early June about the importance of this service to agents and growers.

Dr. E. Barclay Poling  
Campus Box 7609  
Kilgore Hall - Office 252  
NC State University  
Raleigh, North Carolina 27695-7609  
919.515.1195  
919.513.2505 (fax)  
barclay\_poling@ncsu.edu  
mobile 919.418.9687

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Contributed by:

E. Barclay Poling, Director  
SRSFC  
Campus Box 7533, 1017 Main Campus Dr., Suite 1100  
Raleigh, North Carolina 27695-7553  
919.515.5365  
-  
barclay\_poling@ncsu.edu

[The Southern Region Small Fruit Consortium](#)

Campus Box 7533  
1017 Main Campus Drive / Suite 1100  
NCSU Centennial Campus  
Raleigh, North Carolina 27695-7553  
  
919.515.5365