

September 18, 2000

## Strawberry Information

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Late February Strawberry Plasticulture Update - As Dr. O'Dell and Dr. Jerry Williams stress in their excellent new plasticulture guide for colder areas, "This is an exciting, intensive, dynamic (nail-biting) season" (You can order this new bulletin, VCE Pub. 438-018 - Hill System plastic Mulch Strawberry Production Guide for Colder Areas - \$3.50 each. Make check payable to: Treasurer, Virginia Tech. The address is Virginia Tech Extension Distribution Center, 112 Landsdowne Street, Blacksburg, VA 24061-0512). We may be seeing some new strawberry blossoms in a matter of just a few weeks here in the Carolinas, and in this advisory we provide a brief rundown on the current crop condition, and then Dr. Sorensen provides growers and agents of with some timely advice on mites and insects in his article, "Warm Weather Ahead". For the time being, we are enjoying this cooler weather! Ideally, we would stay in the temperature range of low 30's at night and 50's and low 60's in the day for the next few weeks - to keep the crop from advancing too quickly!

1. Crop condition - field inspections of the strawberry plasticulture crop in the lower piedmont and coastal plain sections of North Carolina have indicated little, if any, damage from the cold spell in late January. In piedmont areas temperatures were cold enough to cause internal crown damage (went below 10 F on two nights), but an abundant snow cover kept the crowns and flower buds tissues at a safe temperature. One of the main issues right now relates to the smaller than normal plant size we are observing. At this stage it is important to see two or three crowns in order to project a full crop load. But, if plants have only one crown at this stage, it could mean a significantly reduced crop size. In North Carolina, the smaller than normal plant size is related to the extra delay in field preparation and planting caused by wet fields and flooding related to two hurricanes (Dennis and Floyd). Many growers were forced to entirely omit fumigation. We are keeping a close eye on these fields. On a brighter note, growers that were able to plant on time and fumigate have an excellent looking crop where 'Chandler' and 'Camarosa' plants have several branch crowns and the total crown area has a diameter of one inch or more. Overall, in contrast to the 1998-1999 season in which the winter was so unseasonably warm, we are not seeing a problem with excess plant size and flower numbers. There has been some expression of flowers on both 'Chandler' and 'Camarosa', but we're only looking at several flowers per plant. Typically, 'Chandler' has the valuable characteristic as a variety of "holding back its flowers" in almost every fall/winter season.

2. Disease control - late February is the time to remove dead plant material (remove old leaves, flowers and runners from the plants). This will help reduce the amount of inoculum for all of the fruit-rotting pathogens, especially botrytis. This needs to be done now before there is new leaf development. A protectant fungicide spray can be applied once new growth commences in late winter (we'll cover the fungicides and disease management questions in next week's advisory).

3. Insects and Mites. "Warm weather is ahead" - Dr. Kenneth Sorensen, NC State. Mites and aphids will be prepared, will you? Plants under row covers and those with black plastic and plenty of sunshine will soon expand and any mites or aphids deep into the tissue will reproduce. Again temperatures above 65 degrees will intensify activity. With steady increase to above 70 degrees at the growing point mites and aphids can go from egg to egg in less than 14 days. Weekly examinations to lower leaves and into buds will reveal mites and aphids. Also look for mite eggs. For aphids several materials exist and are effective. Among these are insecticide soap, pyrethrum, diazinon, cygon and thiodan. Lady beetles or even better green lacewings can be introduced to control aphids. These are available from several insect rearing facilities. Aphids midges and smaller parasites are best for greenhouse uses. For mites consider an application of Brigade or Danitol. Both are effective for mites and other insects. Agrimek or Kelthane can also be used. Again temperatures above 65 degrees in the middle of the day are best for pesticides to work. As mite eggs are not killed with these materials a close followup examination in 5 days should indicate the need for a second application. Coverage to the undersides of leaf and to the crown will aid aphid and mite control. Predatory mites can be introduced when temperatures are expected to remain in the 50's and 60's would be effective but somewhat slow to establish and give complete control. Use of a miticide soon and then introduction of predatory mites in March might be a better approach. Keep a close watch on plants for aphids, mites and even thrips and take corrective action when numbers indicate. Send leaves and plants suspected of mites to state plant disease and insect clinic.

4. Frost/freeze control. As Drs. O'Dell and Williams say in their new bulletin (p. 14), "Before the first blooms are visible or berry plants have resumed much spring leaf growth, set up your sprinkler frost control system and test that it will operate dependably for later when it will be needed". Amen! Last year we needed our system by the last week in February at Clayton Central Crops! In retrospect, we started our freeze protection too early in 1999, and should have waited for at least another week or 10 days before starting to protect. Still, it does not hurt to check the system out thoroughly before March rolls around! This is also the time of year to get your row covers ready for use. In the last several years we have had numerous instances of early March windborne freezes in which the row covers and irrigating on top of the covers proved to be our best control program. Irrigation alone is ineffective, and potentially very dangerous, in high wind situations because of evaporative cooling. Row covers alone do not offer enough protection when you have exposed blossoms and buds and temperatures in the mid-to-low 20's. The combination of sprinkler irrigation and row covers is hard to beat. Order those covers **RIGHT AWAY** if you do not have any on hand from last year!

5. Fertility. (after Dr. Gordon Miner's presentation at the 1999 Strawberry Expo). The best fertility program that we have identified through the research program at NC State for plasticulture 'Chandler' and 'Camarosa' strawberries in the spring is to apply from 30 to 60 lbs nitrogen per acre through the drip system. The higher rate is used on deep sandy soils, and the lower rate on deep texture soils. Medium textured soils would need an intermediate rate of say 45 lbs/acre. At Clayton Central Crops Research Station (near Raleigh) we apply the 60 lb of nitrogen in three applications with three weeks between applications. The first application of 20 lbs goes out in Mid-March, or

about the time when we see visible "spring growth". The last application is usually about the last of April.

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