



Strawberry Drought Advisory No. 1

Vol. 8, No. 64

August 27, 2007 (Monday)

Topic: Several Options for Growers Who Wish to Plant by Mid-September (Western NC and Foothills)

Dear Growers and Agents,

As I started to compose this advisory last night (Sunday evening), I witnessed a most unusual event: Rainfall! Perhaps I should start composing more of these advisories? This morning, Billy Little, CES-Agent, phoned and reported to me: “We had a rain in Wilson County.” The he paused and said, “I know now that *we can get rain.*”

But, last night’s rain that was very spotty across the state. In speaking with a grower from Zebulon today, I mentioned that we had about 0.15 in where I live in N. Raleigh, and he responded, “That’s 0.14 in. more than we had at our farm last night!” Another producer north of Asheville had the same experience as the Zebulon farmer, and he said that there were rains north, south, east and west of his farm, but his location got only a few drops!

Here’s the dilemma, especially for growers in WNC

If some rain doesn’t fall soon, a number of strawberry producers may be forced to consider a delay in planting date, or possibly omit fumigation, so as not to delay planting. All fumigants have a “plant-back” requirement, and this period varies from 2-3 weeks. Methyl bromide/chloropicrin (50/50) has the shortest plant-back of any registered fumigant (2 weeks)*, with other fumigants such as Telone C-35 requiring a full 3 weeks. And, if the grower elects to use a herbicide such as Goal, the plant-back will extend to 30 days.

If you are a grower in WNC who likes to plant in the second week of September, then you are going to be limited to using methyl bromide at this stage, and even then its going to be pretty close on the plant-back requirement. For example, if you fumigate with MeBr:Pic on Wednesday, August 29, the earliest you can plant will be Wednesday, September 12. Obviously, there is a very limited amount of time you can wait for rains, and it could become necessary to irrigate at least ½ inch (and that’s a minimum), if you wish to fumigate with MeBr:Pic and plant “on time”. But providing irrigation may not be an option if your pond(s) are currently quite low! For some WNC growers it may come down to conserving what remaining water they have in their ponds (or wells) for crop establishment in mid-September, and not being able to fumigate at all!

Here are the important land preparation steps we generally recommend for growers who want to set out Chandler plugs in the second week of September, and where the producer has decided to use methyl bromide. For fumigants requiring a 21-day plant-back, plan on starting at least one week earlier.

- July, week 4. Whenever there is adequate soil moisture, begin preparing the soil so you can shape the beds and fumigate in early August. In an unusually dry July, you may be forced to irrigate overhead to get the land ready for chisel plowing and sub-soiling, if needed. Sub-soiling is needed every few years on heavy soils. This needs to be done in two directions, north-south and east-west, and it needs to be done deeply to loosen the soil and break up the plow layer (at 10 to 12 inches deep). Breaking up this layer will require setting the draft control so the V-ripper doesn't come up easily when it hits the hard spots. This operation requires extra horsepower! Be sure to incorporate your lime at this stage if you haven't done so already. Ideally the lime should be spread in June, just after the plastic is pulled and the beds are knocked down.
- August, week 1. Have fumigant cylinders delivered to the farm, and complete fumigation rig safety checks. Check with your fumigant supplier to be sure the cylinders are delivered on time and to ensure that the proper safety checks are used.
- August, week 2. Broadcast N-P-K fertilizers and disk them into the soil to prevent nitrogen loss. Disk to a depth of 6 inches, breaking up clods until the soil has a "fluffy" texture. Don't use equipment that will compact the soil (a rotary hoe or rototiller may cause compaction).
- August, week 3/4. Shape the beds and fumigate with methyl bromide + chloropicrin. Lay plastic mulch and drip tape. As the fumigant is injected, the beds should be immediately "tarped" with an *embossed* 1.25-mil black plastic mulch film that can be "stretched" by the mulch-laying and fumigation unit to give an extra tight fit over the bed. This is also the time to seed annual ryegrass (before punching holes for planting).

Avoid using a vegetable bed-maker. Instead, stick with the bed-making equipment that is specifically designed for deep strawberry plasticulture beds (Reddick and Kennco are two of the leading suppliers). A deep bed will produce higher yields and fruit with less soil splash. The 10-inch deep beds mulched in plastic are typically 30 to 32 inches wide at

the base and 28 to 30 inches wide on top. Beds are slightly crowned so water will run off and not rest on the plastic. For example, a bed with a 28- to 30-inch top should slope from the center to the edge with a drop of 1.25 inches. Bed centers are usually 5 feet.

- September, week 2. Transplant plugs. *Always try to allow three weeks between fumigation and planting*, even though methyl bromide:chloropicrin (67:33) is a two-week plant-back material. This extra week will provide a “cushion” for possible weather delays that may occur. Likewise, for a 21-day plant-back fumigant, you really need to allow a four-week waiting period between fumigation and planting. Thus, fumigation with Telone C-35 should be done in the third week of August for an area that will be planted in the third week of September.

What to do now? (growers who wish to plant by mid-Sept)

Option 1:

If your land is too dry right now to chisel plow (and subsoil), and there is little promise of rainfall in the next several days, it is going to be critical for you to find some way to irrigate overhead immediately to get the land ready for fumigation. I know that I am supposed to be writing an advisory with good tips on ways to conserve water, but there is no getting around the need for irrigation now if you wish to stay on your planting schedule and use methyl bromide.

In speaking with some custom fumigators this morning, they stressed the minimum amount of irrigation to get the land plowed and ready is probably around 0.6 inch (~16,000 gal/a).

After you have softened the land up with irrigation, you will need to wait 1 day on heavier land before you can continue land preparation – it will be too sticky on top to do anything the day of irrigation.

The next day you will need to be careful about waiting “too long” to begin working the land – on hot, dry day you could lose the benefit of the moisture applied by the early afternoon. After the land has been worked up, follow the steps above under August, week 2 and August, weeks 3 and 4.

Good tip: You may find it beneficial to pre-bed the rows to make sure that enough soil will be pulled up for the bed-shaper the same disk hillers used for making tobacco beds work nicely for strawberry pre-bedding.

Option 2:

Wait for adequate rain and delay land preparation, fumigation and planting. This option carries substantial risk for WNC growers at higher elevations and north of Asheville.

These are areas of the state where we have observed considerable yield benefits associated with mid-September planting, or even slightly earlier. I did check with 2 major weather services last evening on the temperature outlook for the next 30 days and 90 days, and it is expected that temperatures will be ABOVE NORMAL for North Carolina (this is very good news for growers who still wish to use a fumigant and possibly set one week later than normal).

Option 3:

Wait for adequate rain for land preparation, and omit fumigation. Growers following this option must try to plant as close to mid-September as possible, especially if this land was in strawberries last season.

FOR OPTIONS 1, 2 AND 3: you will definitely need to have your drip irrigation set up and ready to run – a plug plant root ball will quickly dry down (wick out) if the soil in the bed is dry at planting. Run the drip system the day prior to planting to make sure there is adequate moisture in the beds.

Once the plastic mulch is applied, regular rainfall is of considerably less value (shed by plastic).

You must have water set aside for crop establishment using the drip system in a dry fall. If you don't have some water set aside for drip irrigation prior to and following transplanting, I strongly recommend you skip planting strawberries this fall.

POINTER ON METHYL BROMIDE: Remember that if you fumigate soil that is dry with methyl bromide – you have wasted your money! Methyl bromide is a very volatile fumigant and without some soil moisture it will escape much too quickly from the beds and you will have lost much of its value. So you will need to either irrigate or wait for a rain if you plan to use this fumigant!

Summary

Final caution: I have “detected” at some of the summer pre-plant meetings that a number of growers are considering “going on land with strawberries this fall” that was in other crops in the past year, like tobacco. Please be extra careful to check with your agent about the various chemicals applied to this land over the last 12-18 months, it is especially important to review the herbicides used, and whether tobacco suckering materials were used.

*NOTE: the methyl bromide/chloropicrin formulation being used now (50:50) has more chloropicrin than last year (50% vs. 33%), and this higher chloropicrin content will **not** permit any flexibility on the 14 day plant back.

We'll keep hoping for some rain! Perhaps one thing we can say for the future to help avoid situations like this is to *get the land ready for chisel plowing and sub-soiling after harvest in June or in early July. However, do not apply your preplant fertilizer until just*

prior to fumigation as it can easily leach away during the summer.

Barclay Poling

Extension Specialist and Professor (Small Fruits)
Dept. of Horticultural Science
Box 7609
252 Kilgore Hall
NC State University
Raleigh, NC 27695-7609
919-515-1195 office
919-418-9687 cell
919-515-2505 fax