Field Crops Newsletter

Granville and Person County
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Tobacco Greenhouse Reminders

JANUARY 2024

INSIDE

With the new year comes the time to think about tobacco greenhouse season. Here are your annual reminders for good tobacco management practices!

A successful tobacco crop starts with timely tests, so plan carefully to get both your **source water** and **nutrient solutions** tested this season.

The most common water quality problems for float bed source water in North Carolina are alkalinity, pH, sodium, and chloride. Having a timely source water sample can allow grower to address the issues early, before the quality of your transplants is impacted. This will be a *source water* sample, using the code ST on your sample form. Run your water for a good 5 to 10 minutes before collecting your sample. Use a clean, plastic bottle, like a cleaned-out soda or water bottle. Before filling the bottle, rinse it with the water being collected.

Nutrient solution samples should be taken after fertilizers have been mixed into the bays. Growers should send samples to ensure that target nutrient levels have been reached. When taking this sample, make sure that fertilized has been completely dissolved and is thoroughly mixed within the bay. Collect the sample from the emitter, NOT the stock tank. Use the code NT on your sample form (unless you are using an ORGANIC nutrient solution - then use the code NG). The cost is $5 for North Carolina residents and will return results 3-4 days from the receiving the sample. Come by the extension office to bring your samples and get the solution sample form.

You can also use an EC meter to see if your nutrient concentration is correct, though I recommend sending in at least one nutrient solution sample. Below are target EC measurements based on desired PPM and fertilizer used. If you use another blend, refer to the chart on the back of the bag. Note that applying battery acid can make your EC reading high.

- Ultrasol 16-5-16
  - 100 ppm – 0.80 mS/cm
  - 150 ppm – 1.20 mS/cm
- Ultrasol 20-10-20
  - 100 ppm – 0.65 mS/cm
  - 150 ppm – 0.98 mS/cm

This newsletter is designed to give you up to date information on crops from NC State University and other sources. For more information:

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Tobacco Greenhouse Reminders (continued)

Here are some greenhouse fertility guidelines from NC State:

1. You should not fertilize floatbed water with NPK products ahead of seeding. Nutrients applied before seeding should ONLY be in rare situations where there has been a history of something like low calcium or low boron. This is why getting your water tested is so important.
2. Use a 2-1-2 or 3-1-3 ratio fertilizer, like 20-10-20 or 16-5-16.
3. A split application of nitrogen is recommended. The target total nitrogen application should be 250 ppm:
    a. 150 ppm nitrogen should be added to the float water 7-10 after trays are floated.
    b. 100 ppm nitrogen should be added to the float water 3-4 weeks later.

There are examples and records of this in the 2024 Flue-Cured Tobacco Guide (which should be available to growers soon) but below are some important calculations for determining fertilizer applications.

Float Water Volume:

$$Float\ Bed\ Volume\ (cubic\ feet) = bed\ length\ (ft) \times bed\ width\ (ft) \times water\ depth\ (ft)$$

$$Gallons\ of\ water = Float\ Bed\ Volume\ (cubic\ feet) \times \frac{7.48\ cubic\ feet}{gallon}$$

Example: Float bed that is 100 ft X 16 ft and 4 inches deep.

$$100\ feet\ long \times 16\ feet\ wide \times 0.33\ feet\ deep = 528\ cubic\ feet$$

$$528\ cubic\ feet \times \frac{7.48\ cubic\ feet}{gallon} = 3949\ gallons\ of\ water$$

Nutrient Calculation:

$$Fertilizer\ added\ per\ 100\ gallons\ of\ water = \frac{Desired\ water\ concentration}{\% \times 0.75}$$

Example: Targeting 150 ppm of nitrogen using a 16-5-16 fertilizer.

$$\frac{150}{16 \times 0.75} = \frac{12.5\ ounces}{100\ gallons\ of\ float\ water}$$

Total Fertilizer Calculation:

$$Pounds\ of\ fertilizer = \frac{Ounces\ of\ fertilizer}{100\ gallons\ of\ float\ water} \times \frac{Gallons\ of\ water\ in\ float\ bed}{100} \times \frac{1\ ounce}{16\ pounds}$$

Example: Finding the pounds of fertilizer needed in a float bed with 3949 gallons of water (examples from above).

$$\frac{12.5\ ounces}{100\ gallons\ of\ float\ water} \times \frac{3949\ gallons\ of\ water}{100} \times \frac{1\ ounce}{16\ pounds} = 30.85\ pounds\ of\ fertilizer$$

If you have any questions about greenhouse management or fertilizer recommendations, please let me know!

EPA Reinstates Chlorpyrifos for Crops, Soy Growers Applaud

American Soybean Association

The U.S. Environmental Protection Agency announced Tuesday its decision to restore the use of the pesticide chlorpyrifos on crops(https://www.epa.gov/pesticides/epa-update-next-steps-chlorpyrifos), including soybeans, following a recent ruling by the U.S. Court of Appeals for the Eighth Circuit. The court found that EPA unlawfully revoked tolerances, ending use of the insecticide in 2021. ASA Director **Alan Meadows (TN)** spoke on behalf of the soy industry, expressing soy's satisfaction.

"U.S. soybean growers welcome the announcement that chlorpyrifos tolerances and uses will be restored, and EPA will commit to a science-based review of the pesticide, as ordered by the Eighth Circuit Court. EPA's own science has repeatedly found there are at least 11 high-benefit, safe uses of chlorpyrifos, including for soybeans—a fact of which we will continue to remind the agency throughout this process," said Meadows.

EPA's decision aligns with the Nov. 2 ruling from the Eighth Circuit Court of Appeals (https://ecf.ca8.uscourts.gov/opndir/23/11/221422P.pdf) which determined that EPA neglected to consider its own scientists' findings in ending what were found to be safe uses of chlorpyrifos. The court vacated the EPA rule, restoring all agricultural uses of the pesticide.

Farmers rely on pesticides like chlorpyrifos to protect crops and uphold conservation practices. Congress has established science-based processes to ensure safe use without harm to people or the environment.

This decision follows a 2021 effective ban on chlorpyrifos use on food and feed crops, stemming from a Ninth Circuit Court ruling which gave EPA the choice to prohibit all uses or make a finding on residue levels from safe uses within 60 days. EPA is expected to officially reinstate chlorpyrifos use imminently, pending the ruling from the Eighth Circuit going into effect.

Grower groups, including ASA, have voiced concerns about blanket bans on chlorpyrifos, highlighting the negative impact on crops and farmers' livelihoods when agencies disregard their own science and processes.

While EPA allows all revoked uses of chlorpyrifos to resume, it plans to propose a new rule revoking pesticide residue tolerances for all uses except 11 specified by the court. These 11 uses, including crops like alfalfa, soybeans, citrus, peaches, and tart cherries, rely on chlorpyrifos to control various insects.

Managing Agriculture Machinery to Limit Soil Compaction in NC

Soil compaction is one of the most common issues that contribute to soil degradation in modern agriculture. Soil compaction is a process that reduces the space between soil particles, which then limits air and water movement within the soil. Soil compaction limits root growth, which decreases available water to the crop and reduces nutrient uptake. Agricultural practices such as the use of heavy agricultural machinery and tillage management, as well as substantial field traffic, rainfall, and livestock cause most soil compaction. Here are some interesting facts and tips on reducing soil compaction on your farm:

- Most soil compaction occurs during the first pass of machinery
- Avoid putting machinery in the field when soil is wet to reduce traffic induced compaction and compaction due to tillage
- The pressure a tire exerts on the soil is roughly equal to its air pressure, so monitoring tire pressure can reduce compaction
- Attempt to drive on the same lanes in fields so compaction in a single lane and not extended across the field
- If no-till is not an option, reducing the intensity and frequency of tillage and adding practices like cover cropping can promote soil structure development
- Corn tends to have greater yield benefits than soybeans when switching to no-till from conventional till

Upcoming Events:

Old Belt Tobacco GAP Meeting

January 10th @ 8:30AM

- Caswell County Civic Center (536 Main St., Yanceyville)
- Breakfast and Lunch will be provided
- N, D, O, and X pesticide recertification credits offered.
- Respirator Fit Test avalaible upon request with proper medical clearance (Contact Matt Solomon at 336-694-4158 for more information
- Register at https://oldbeltregionaltobaccomeeting.eventbrite.com/

Upper Middle Belt GAP Tobacco Meeting

January 22nd @ 9AM

- Granville County Expo & Convention Center (4185 U.S. 15, Oxford)
- Lunch will be provided.
- N, D, O, and X pesticide recertification credits offered.
- Optional Soil Fumigation Training will be offered after lunch.
- Register at: go.ncsu.edu/UpperMiddleTobacco2024

Wheat Management Drop-In Field Day

March 23rd from 10AM-1PM

- *Approximate Location:* 1018 Hillsboro St., Oxford (Close to Oxford Tobacco Research Station Office)
- Drop in for 10 minutes or an hour, up to you!
- Discuss wheat management topics like tiller counting, fertility and pest management, and any other requested topics
- Register at: go.ncsu.edu/DropInWheat

Respirator Fit Test

Upon request at the Old Belt Tobacco GAP Meeting OR
January 29th

- N.C. Cooperative Extension – Granville County Center (125 Oxford Outer Loop, Oxford)
- Contact me to receive the required medical forms which must be sent with payment ($85) to Occupational Team Solutions.
- Call Occupational Team Solutions at 336-210-5658 with any questions or concerns.

ABOUT N.C. COOPERATIVE EXTENSION

North Carolina Cooperative Extension is a strategic partnership of NC State Extension, The Cooperative Extension Program at N.C. A&T State University, USDA-NIFA, and 101 local governments statewide. Extension professionals in all 100 counties and the Eastern Band of Cherokee translate research-based education from our state's land-grant universities, NC State and N.C. A&T, into everyday solutions. Extension specializes in agriculture, youth, communities, food, health and the environment by responding to local needs.