Field Crops Newsletter

Granville and Person County
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Tobacco Greenhouse Reminders

JANUARY 2025

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

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.**

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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Winter Farm Management – What Should I Be Doing? (continued…)

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 2025 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!

Winter Farm Management – What Should I Be Doing?

It is safe to say that 2024 was a very rough crop year. I understand that each of you will likely be thinking about very different management tactics for the upcoming crop year – trying to get as much out of this winter wheat crop to get some income for the farm in June/July, wanting to aboslutely minimize all inputs for 2025, and everything in between. If you have never looked very closely at the bottom line for your farm, I HIGHLY encourage you to do so this year. Having a solid idea of your budgets and bottom line can help you determine what management practices you can, or should, utalize on your farm. Here are some tools I think you should take a look at to help make some of these decsions:

Budget Comparison 2024 Crop Year Cost & 2024 Market Conditions With Given Yields

100 Enter Average Land Rent 100
Yellow cells with numbers are time sensitive or must be updated
Grey cells SHOULD NOT be updated or changed
$ X.XX Cells with blue numbers can be adjusted to your farm estimates

	Corn	Soybean	Wheat	Sorghum	Cotton	Peanuts	Tobacco	Sweet Potatoes
2024 ESTIMATED GROSS RECIEPTS								
Yield (bu/acre)[1]	140	50	75	100	--	--	--	410.00
Yield (lbs./acre)--Cotton, Peanuts and Tobacco	--	--	--	--	900	4,000	2,200	--
Yield (lbs./acre)--Cotton Seed	--	--	--	--	1,503	--	--	--
Price (New Crop Futures Price from CME & NYBOT 2/27/2024) or contract price	$4.61	$11.31	$4.36	$4.38	$0.84	$0.27	$2.20	$9.52
Cotton Seed	--	--	--	--	$0.10	--	--	--
Projected New Crop Basis	$0.75	$0.30	$0.75	$0.85	($0.02)	$0.00	$0.00	$0.00
EXPECTED NET PRICE (New Crop Futures + Basis)[2]	$5.36	$11.61	$5.11	$5.23	$0.82	$0.27	$2.20	$9.52
Gross Revenue	$750.40	$580.50	$383.25	$522.95	$888.30	$1,080.00	$4,840.00	$3,903.20
2024 ESTIMATED VARIABLE EXPENSES[1]								
SEED or TRANSPLANTS	$ 58.87	$ 65.00	$ 47.50	$ 19.00	$ 116.34	$ 133.90	$ 270.00	$ 540.00
INOCULANT	$ -	$ -	$ -	$ -	$ -	$ 22.96	$ -	$ -
AMENDMENTS								
NITROGEN 30%	$ 204.80	$ -	$ 187.52	$ 192.00	$ 27.00	$ -	$ -	$ -
AMMONIUM SULFATE	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 281.90
DAP (18-46-0)	$ 75.04	$ -	$ -	$ -	$ 23.40	$ -	$ -	$ -
0-0-50 POTASSIUM SULFATE	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15.5-0-0	$ -	$ -	$ -	$ -	$ -	$ -	$ 75.27	$ -
PHOSPHATE (0-46-0)	$ -	$ 40.02	$ 37.72	$ 28.52	$ -	$ 9.00	$ -	$ 37.50
POTASH (0-0-60)	$ 31.11	$ 59.67	$ 23.46	$ 20.40	$ 23.00	$ 41.40	$ -	$ 122.67
9-45-15 TRANSPLANT STARTER	$ -	$ -	$ -	$ -	$ -	$ -	$ 21.45	$ -
BORON	$ -	$ -	$ -	$ -	$ 6.00	$ 50.00	$ -	$ -

Crop Comparison | Crop & Farm Summary | 2024-Farm-TrendYield_Predictor

NC State Enterprise Budgets - go.ncsu.edu/enterprisebudgets

In NC State's Farm Management Department, Derek Washburn has been working hard to update the "enterprise budgets" for crops grown in North Carolina. These budgets are basically a starting point to look at the expenses for growing different crops, like tobacco, corn, soybeans, wheat, sorghum, forages, and much more. There are also budgets for animals avalaible! If you have looked at the different tobacco books in the past, there is always a budget within the first two chapters. I highly encourage folks that have not created a budget or tracking system of some kind to look very closely at your expenses and income, to look at these resources and start to this year. Knowing exactly how much money is being spent and made is going to be vital for farms in 2025.

Crop Comparison Tool

Also found on the enterprise budget page is the Crop Comparison Tool. This is an Excel File download that is very similar to the enterprise budgets, but allows for growers to input costs and prices received for each crop, and can view them side-by-side. This can help growers figure out how many acres of land they should be reserving for each crop to maximize farm income. Currently the tool is updated from the 2024 crop year. If you would like to sit down and go through this tool for your specific operation, please let me know!

Take Wheat Tiller Counts Soon!

What can you possibly be doing in January for your winter wheat? Surprisingly, there is a great practice that you can do in January to help plan your wheat management for the springtime to minimize fertilizer input costs and maximize yields. It is ALWAYS a good idea to go and scout your fields, but January/February is actually a great time to scout wheat. Tiller counts, or counting the number of potential grain heads you will have in the spring, is an incredibly useful scouting technique. Getting a count of the number of tillers in your wheat field now can tell you when to apply fertilizer and how much to apply!

Photo 1: *Left* - a single wheat tiller. *Right* – a wheat plant with multiple tillers.

What is a tiller? A wheat tiller is basically a single wheat stem. Each wheat plant will likely (hopefully) have multiple tillers at this point in the season. Right now, wheat is finishing up developing “fall tillers”. Fall tillers will produce the largest seed heads in the spring, so they provide the most yield to a wheat crop. Sometimes, situations occur when wheat does not tiller the way we want it to. When this happens, the only way to recover yield lost by not having enough fall tillers is to encourage the development of *spring tillers*. Spring tillers develop between now and March, and while they don’t develop as large of seed heads as fall tillers, they can still contribute significantly to yield if managed correctly.

How can a tiller count help plan nitrogen applications? Knowing the number of tillers per square foot can let you know if you are in need of an “emergency application” of nitrogen. This shot of nitrogen occurs before the typically top-dress timing (at growth stage 30 (GS30)) and will stimulate spring tiller development and hopefully recover yield loss from the lack of fall tillers.

How to take a tiller count? Bring a yardstick out to the field with you. In multiple locations, count the number of individual tillers that are in a yard of row and average all of your counts together. Then, figure up the number of tillers per square foot using this formula:

$$tillers\ per\ square\ foot = \frac{(tillers\ per\ yard\ of\ row) \times 4}{row\ width\ in\ inches}$$

So, if you counted an average of 60 tillers per yard row in a field planted at 7.5-inch row spacing, that would be *(60*4)/7.5,* meaning you have 32 tillers per square foot.

Take the result of this count and use the graphic in Photo 2 (right) to determine if nitrogen should be applied soon, or if you should wait until topdress. Following our example, this would mean that at 32 tillers per square foot, you should apply 40-50 lbs of nitrogen as soon as possible to spur on the development of tillers.

**Note that this process would be different for broadcast wheat, and I can walk anyone through the broadcast wheat process if needed!*

Topdress fertilizer management comes with its own set of scouting recommendations, and I will discuss that in next month’s newsletter!

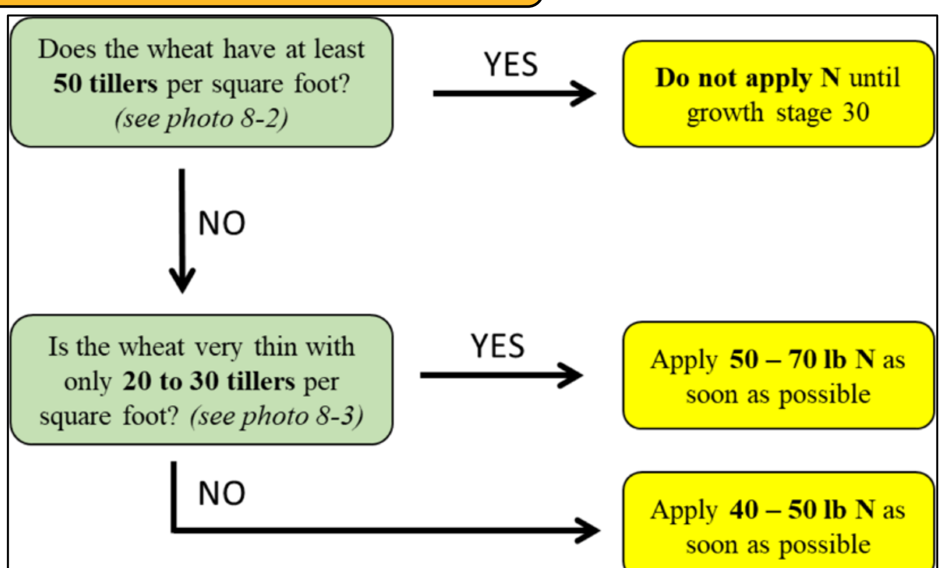

Photo 2: Graphic of tiller count decision guide. *From the NC State 2021 Small Grains Production Guide.*

Upcoming Events:

Old Belt Tobacco GAP Meeting

January 22nd @ 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 2025TobaccoProductionMeeting.eventbrite.com

Upper Middle Belt GAP Tobacco Meeting

January 27th @ 9AM

- Franklin County Plaza (**279 S Bickett Blvd, Louisburg, NC 27549)**
- 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/uppermiddletobacco25

Burlington Soybean School

January 29th @ 9AM

- Occasions Catering & Southern Cuisine, 286 E Front St, Burlington, NC 27215
- 2 hours of N,O,D, and X Pesticide Recertification Credit Offered
- Lunch will be provided
- REGISTRATION REQUIRED at go.ncsu.edu/soybeanschoolregistration

Respirator Fit Test

Upon request at the Old Belt Tobacco GAP Meeting - contact Matt Solomon for more information (336-694-4158)

OR

January 21st with Occupational Team Solutions

- 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 ($95) to Occupational Team Solutions.
- Call Occupational Team Solutions at 336-210-5658 with any questions or concerns.