

Field Crops Newsletter

Granville and Person County
Mikayla Berryhill

A note from your agent - Happy Thanksgiving!



This Thanksgiving edition of the newsletter is coming out a little later in the month than usual. As you may know, I got married at the end of October, and went on my honeymoon directly after. Unfortunately, my groom and I got sick on the honeymoon, and it stuck with me for about two weeks after returning to the States! We still had a great time, but we are thankful to finally be feeling better and be back at work!

I also wanted to take up this part of the newsletter to wish you and your family a Happy Thanksgiving! While I know that getting the final bit of harvesting done is very important, I hope the timely rain forecasted on Thanksgiving Day gives you some guilt-free time with your family. I for one am very thankful to be coming up on one year in this position where I have gotten to meet and support your operations during my time here. Thank you all for being so welcoming!

Finally, I want to also let you know to keep your eye out for a special edition of the newsletter – a research roundup newsletter. This will summarize the research that I helped manage in the area and the data that we have so far with preliminary findings. My hope is that this grows every year, and becomes more and more relevant to your operations.

Have a great Thanksgiving!

NOVEMBER 2022

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Save the Date!

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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Color Banding in Wheat

By Dr. Angela Post

A common problem we encounter this time of year is color-banding in wheat. The most common cause is wide fluctuations in temperature at the soil surface or a very cold night for seedlings that have been experiencing mostly mild temperatures since emergence.

Two types of discoloration can occur due to cold temperatures. The first is a purpling of leaf tips which occurs when there has been prolonged cold. This usually happens after the stand is well established and a period of cold sets in for 1-2 weeks. This symptom can also be an indication of phosphorus deficiency, which tissue samples can confirm.

The other is bright banding which may or may not have a reddish halo in the middle of young leaves (see images below). If every seedling is affected, it can give the entire field an pale appearance and may cause growers to think about nutrient deficiencies or carryover herbicide injury. If there have been wide swings in temperature, >20 F between day and night-time temperature, or there have been frosts on a crop for the first time, you may see this symptomology show up in your fields. It is caused by wide fluctuations in temperature right at the soil surface, which is why it shows up in distinctive bands. Seedlings which have not developed the first true tiller are most susceptible to these temperature shifts. The symptom is transient and within 7-10 days of moderate daytime temperatures, it should resolve itself. No action is needed. Mikayla Graham captured these images of the issue in Granville County. This is the first report I have received in 2022, but with cold temperatures setting in for the next 10 days, more growers may encounter this in their fields.



Farm Foundation Forum on What to Expect from the 2023 Farm Bill

Farm Foundation®, an accelerator of practical solutions for agriculture, will host its next virtual Forum, What to Expect From the 2023 Farm Bill, on Tuesday, December 6, from 10:00 to 12:00 a.m. EST. Spencer Chase, managing editor of Agri-Pulse, will moderate the panel, which will include diverse perspectives from these expert contributors:

- Christopher Adamo, former staff director, Senate Committee on Agriculture, Nutrition, and Forestry
- Jonathan Coppess, director, Gardner Agriculture Policy Program and associate professor of law and policy, University of Illinois at Urbana-Champaign
- U.S. Congressman Glenn G.T. Thompson, Pennsylvania's 15th District, U.S. House of Representatives

The Forum will be an evolution of a conversation started in a recently published [Farm Foundation Issue Report](#) on the upcoming farm bill and provide further insights informed by developments since its publication. Audience members will be invited to submit questions for the panelists to answer live during the event. "A new farm bill is informed by various factors, such as the outcomes of the recent mid-term election," says Shari Rogge-Fidler, Farm Foundation president and CEO. "With this fresh data to analyze, we could not have gathered a better panel to examine the possible path of the next farm bill." This event is being held virtually and is free to attend, but registration is required. Farmers, ranchers, food and agribusiness leaders, government officials and staff, industry representatives, NGO representatives, academics, students in agricultural disciplines, and members of the media are all encouraged to attend. Register at farmfoundation.org.

Equilibrium Moisture Content for Grains

With the last of the crop coming out of the field, it is important to ensure that the best moisture levels are reached so you can get the optimum price when you take it to market. If you do not have a grain dryer, this can be a challenge. A successful way of drying down grain without a dryer is by using the idea of Equilibrium Moisture Content (EMC). By using this concept, you can turn on your grain bin fans during specific levels of relative humidity and temperature to have the grain “equalize” or reach a moisture level. Some important things to remember:

- Drying time will depend on the airflow rate through grain, which in turn depends on the depth of grain in a bin. The minimum drying rate for natural air drying is 1 cfm/bu, but this can take up to a month to dry the top layer depending on the grain and air conditions-- during which time spoilage can occur.
- The air space between kernels in a bin of corn will have the humidity indicated at the corresponding moisture and temperature. For example, 15% corn at 60 degrees will generate a relative humidity in the air space between kernels of 70%, but when cooled to 45 degrees will have a relative humidity of 65%.
- Mold growth is suppressed during storage when the environment is maintained at a relative humidity level of 65% or lower.

Use the tables below to identify the ideal time to run your storage fans:

Table 1. Equilibrium moisture content of yellow corn (%wb) at different temperature and relative humidity levels.

Temp.	Relative Humidity (%)									
	10	20	30	40	50	60	65	70	80	90
F	Equilibrium moisture content, %wb									
35	6.5	8.6	10.3	11.8	13.3	14.8	15.7	16.6	18.7	21.7
40	6.2	8.3	9.9	11.5	12.9	14.5	15.3	16.2	18.3	21.3
50	5.7	7.8	9.4	10.9	12.3	13.8	14.7	15.5	17.6	20.5
60	5.3	7.3	8.9	10.3	11.8	13.3	14.1	15.0	17.0	19.9
70	4.9	6.9	8.4	9.9	11.3	12.8	13.6	14.4	16.4	19.4
80	4.6	6.5	8.0	9.4	10.8	12.3	13.1	14.0	16.0	18.8
90	4.2	6.1	7.7	9.1	10.5	11.9	12.7	13.5	15.5	18.4

Source: ASAE Data D245.4 / Average of two prediction equations.

Table 2. Equilibrium moisture content of soybeans (%wb) at different temperature and relative humidity levels.

Temperature		Relative Humidity (%)									
		10	20	30	40	50	60	65	70	80	90
C	F	Equilibrium moisture content, %wb									
1.7	35	4.2	5.3	6.5	7.8	9.4	11.5	12.8	14.4	19.1	28.9
4.4	40	4.1	5.3	6.4	7.7	9.3	11.3	12.6	14.2	18.9	28.7
10	50	4.0	5.2	6.3	7.6	9.1	11.1	12.4	14.0	18.6	28.2
16	60	4.0	5.1	6.2	7.4	8.9	10.9	12.2	13.7	18.3	27.8
21	70	3.9	5.0	6.1	7.3	8.8	10.7	11.9	13.5	17.9	27.3
25	77	3.8	4.9	6.0	7.2	8.6	10.6	11.8	13.3	17.7	27.0
32	90	3.7	4.8	5.8	7.0	8.4	10.3	11.5	13.0	17.3	26.5

Source: ASAE Data 245.5 / modified-Halsey equation

Adapted from University of Kentucky's Sam McNeill

SAVE THE DATE

Upper Piedmont Tobacco Meeting

January 10th

- IN PERSON at the Caswell County Civic Center in Yanceyville, NC
 - This will include a GAP training and normal production update from NC State
 - Any growers are welcome to attend, but the extension agents from Person, Caswell, Rockingham, Alamance, and Guilford counties are working together on this event
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Northeast Piedmont Tobacco Meeting

January 25th

- IN PERSON at the Franklin County Plaza in Louisburg, NC
 - This will include a GAP training and normal production update from NC State
 - Any growers are welcome to attend, but the extension agents from Vance, Franklin, Warren, and Granville counties are working together on this event.
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Northeast Piedmont Grain Meeting

February 28th

- IN PERSON at the Armory Civic Center in Warrenton, NC
 - Any growers are welcome to attend, but the extension agents from Vance, Franklin, Warren, and Granville counties are working together on this event
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Upper Piedmont Grain Meeting

March 15th

- IN PERSON at the Rockingham County Center in Reidsville, NC
 - Any growers are welcome to attend, but the extension agents from Person, Caswell, Rockingham, Alamance, and Guilford counties are working together on this event
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Upper Piedmont Corn Meeting

March 23rd

- IN PERSON at the Granville Expo Center in Oxford, NC
 - Any growers are welcome to attend, but the extension agents from Franklin, Granville, and Person Counties are working together on this event
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MORE INFORMATION TO COME ON ALL EVENTS

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.