


April 5, 2019

To: Pasquotank County Farmers

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### Avoidance to Maximize Corn Yields

Dr. Heiniger's production meeting was filled with useful information about ways to help insure a profitable corn crop in such a potentially challenging year, but **there is one particular point that I wanted to emphasize. It was about avoidance, in the period of seeding to V3** (i.e. the leaf collar of the third leaf on a young corn seedling is visible; probably 1 to 2 more leaves actually emerging from the whorl). The points are as follows:

- **Aim to Plant so that 40 to 50 GDD are accumulated over the next four days.** The formula is  $(\text{Daily Maximum temperature } ^\circ\text{F} + \text{Daily Minimum temperature } ^\circ\text{F}) \div 2 - 50 = \text{Growing Degree Days (GDD)}$ . There is an upper base limit of 86°F and a lower base limit of 50 for corn. If the daily maximum is higher than 86°F, then 86°F is used for the daily maximum. If the daily minimum temperature is less than 50°F, then 50°F is used.

For example, a maximum temperature of 70°F and a daily minimum of 40°F would solve as follows:  $(70 + 50) \div 2 - 50 = 10 \text{ GDD}$ . The reason 50 was used instead of 40 is that when the minimum is less than 50, then 50 is used. After having gone through this exercise, there are apps that you can download on your smartphone that will do this.

- **No more than 2 inches of rainfall for the first 7 days following planting.**

This concept is also used in cotton except the factors considered are not exactly the same. Dr. Heiniger's research about uniformity of emergence impacts corn yield. When emergence of corn seedlings is delayed more than a couple of days, the yield can take a hit and when it is drawn out

over more than a week, it greatly cuts into yield. **My recommendation is to consider Dr. Heiniger's 2 factors when deciding to plant your corn, especially with regards to weather and current soil conditions (soil moisture, soil temperature, soil-seed contact).**

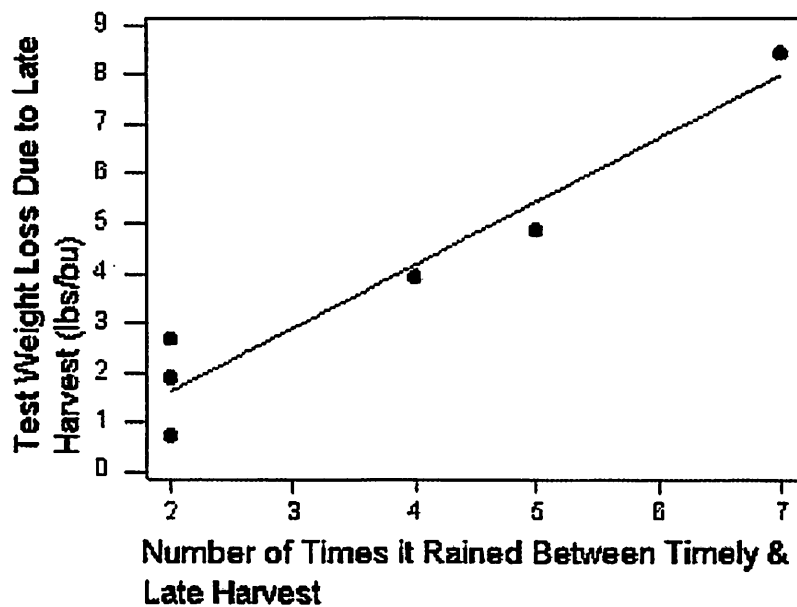
### **What About the Wheat Crop?**

Although, this wheat crop has had a tough time with saturated soils nearly the entire growing season, a lot of this crop looks reasonably good. In late January, several of the counties in the northeast did a survey of wheat including doing tiller counts. Tiller counts were from the upper 50's per square foot to slightly more than 130 per square foot. In the last couple of weeks many growers have been applying topdress nitrogen. Since then, most of these fields have responded very well and have a very dark green color.

What is my take on this crop? **First, it looks like there will be some good wheat** (possibly great) out there, but I feel that it will be on our better drained soils. **Secondly, the wheat is in that stage of development when important management practice decisions are made.** Wheat if not already jointing will be within a week. Dr. Post mentioned at our mid-season wheat meeting that heading should be occurring from April 8<sup>th</sup> to April 21<sup>st</sup>. **Thirdly, if you have not already started scouting for pests, then you need to.** As this wheat gets bigger and thicker, it will create an environment down in the canopy like a greenhouse that will make it favorable for foliar diseases, unless weather conditions are not conducive. Also, I have been getting reports from states like Texas, Oklahoma, and Louisiana about various rusts in small grains that emphasizes the need to be vigilant.

**If this rainy weather continues on into flowering, then we will need to be mindful of scab.** A site that I use can be found at the following URL: <http://www.wheatcab.psu.edu/>. There are three pieces of information that are needed: (1) the state, (2) the model (choose winter, winter wheat) as well as the level of resistance of your wheat (susceptible, moderately susceptible, and moderately resistant), and (3) weather forecast model (0 hours – day of assessment, up to 72 hours based on predicted weather). By default, the risk maps are based on weather observations for 15 days prior to the assessment date you selected. You can incorporate predicted weather directly into the model prediction using different Weather Forecast Modes. Selecting the 24, 48 and 72 buttons in this section allows you to view risk maps incorporating the corresponding hours of predicted weather. At the 2019 NE Ag Expo Small Grain Field Day, Dr. Cowger talked about a new product, Miravis Ace, that showed promise, especially with wheat head scab, although it does control some other foliar diseases of wheat.

**The last point is on timeliness of wheat harvest.** I mention it now so that you can be thinking about it as you approach wheat harvest. The loss in test weight is directly related to how many times it rains on mature grain standing in the field. It does not matter how much it rains, only how often. The graph below shows that every time the mature grain got wet, it lost about 1 pound in test weight. Instead of harvesting grain that is dry (13.5%) or less, maybe harvesting at a higher grain moisture may result in more dollars unless the moisture dockage outweighs the bushels and grain quality.



### **Don't Miss A Marketing Opportunity for Your Crop**

There are basically three things that are needed in marketing grain and they are the cost of producing the crop, the prices offered, and realistic values for expected yields. Two bits of the information that you need when you are marketing your crop you should already have (or come pretty close) and they are cost of producing and expected yields. The third bit of information you need is the prices offered. Quite often, but not always, the markets react to information provided via the USDA reports. **The next USDA report will be the Grain Stocks and Prospective Plantings on Friday, March 29<sup>th</sup> and WASDE on Tuesday, April 9<sup>th</sup>.**

I am not an economist, but one thing I do know is that if an opportunity presents itself, take advantage of it. From all that I can hear from those that are knowledgeable about grain marketing is that there may not be many opportunities for relatively good prices, unless something drastic happens at home or abroad. I'll say it again, if you know what it cost you to grow your crop, and you know what you can routinely expect with regards to yield, you are better prepared to know when to forward cash contract when an opportunity presents itself. **Somewhere in the past, I had someone to tell me the following, "If you can pencil in a profit, you cannot go broke."**

### **Ordering Soybean Seed and Considerations Influenced by Soybean Seed Quality**

I am reading in Popular Ag Press and hearing more and more talk about a tight soybean seed supply for 2019 and some are even questioning the quality of this year's soybean seed supply. Through conversations in North Carolina, it seems we may have an adequate overall volume of soybean seed, but getting the variety you specifically want could be a challenge. What does this mean to you as a grower. Consider the following:

- **If your situation will allow it, don't delay in ordering soybean seed**, especially if you know what you want with regards to varieties and their quantity.
- **Know whether or not the seed from your supplier are treated or not.** Fungicidal seed treatments may help protect any seed that had the chance of germinating from a range of seedling diseases. Please see the NC State Soybean Production Guide for a list of fungicidal seed treatments and their efficacy against a variety of pathogens. There is no data in North Carolina to support the benefit of an insecticidal seed treatment in soybeans and using one could intensify resistance in other crops like cotton.
- **Use a lot of discretion when deciding to plant soybean.** With a tight seed supply, there may not be opportunity to replant with the same variety or another variety you may want.
- **Seeding rates may have to be increased.** To calculate a seeding rate, use the following:

$$\frac{\text{Desired Plant Population}}{\text{Percent Germination} \times \text{Percent Pure Seed} \times \text{Percent Live Seed Emergence}} = \text{Seeding Rate}$$

Growers can use this equation with any unit — acre, square yard, square foot — as long as the same unit is used in both seeding rate and desired plant population.

For example, to establish a stand of 140,000 plants per acre using a 20-inch row planter. The seed tag indicates that the seed has a 92 percent germination rate and is 98 percent pure live seed. Assuming a 10 percent loss in germination due to a clay soil that crusts, what seeding rate will achieve the desired plant population?

$$\frac{140,000 \text{ plants per acre (Desired Plant Population)}}{0.92 \text{ (Percent Germination)} \times 0.98 \text{ (Percent Pure Seed)} \times 0.90 \text{ (Percent Live Seed Emergence)}} = 172,532 \text{ seeds per acre (Seeding Rate)}$$

Below is a table that gives four situations (Extra Good, Good, Not Good, and Terrible) that demonstrate the impact of percent germination and percent live seed emergence on seeding rate to get the desired plant population. **When comparing the Extra Good Situation to the Terrible Situation, you can see the very large difference that percent germination and percent live seed emergence can have on seeding rate.** Seeding rate for the Terrible Situation has to be increased by 77% to give you a plant population of 140,000.

- **If you have a range in seed quality (very good percent germination to not so good), it may be that you plant your best quality seed first**, especially when planting full season soybean, so that the seeds have the best opportunity to come up followed by lesser quality seed since they should generally have better conditions (hopefully warmer and drier soils), although poor conditions for seed emergence can occur at most any planting date.

Situation*	Desired Plant Population (number of plants per acre)	% Germination (off seed tag)	% Pure Seed (off seed tag)	% Live Seed Emergence (based on anticipated field conditions and how they impact seedling emergence)	Seeding Rate (number of seeds per acre for desired plant populations)	% Increase in seeding rate when compared to Extra Good Situation
Extra Good	140,000	0.90	0.98	0.95	167,865	na
Good	140,000	0.90	0.98	0.90	176,322	5
Not Good	140,000	0.80	0.98	0.80	223,285	33
Terrible	140,000	0.80	0.98	0.60	297,872	77

\*Situation: The following are situations with arbitrary values used to illustrate impact of seed quality (Percent Germination) and the result of soil/environmental conditions the seed experience at time of emergence expressed by Percent Live Seed Emergence on seeding rate.

### **Don't Forget about Stink Bugs in Corn**

I know that some of you probably were taken back by the title of this article because hotspots for stink bug damage in corn persist in the region since they came on the scene in 2015. Knowing that it is a concern, especially with some growers, I want to share information with you on this topic.

**Brown stink bug is the primary pest species of corn in North Carolina**, although brown marmorated stink bug, green stink bug and southern green stink bug can also be pests. They feed through piercing sucking mouthparts and can cause three distinct types of damage.

- Early vegetative stages (V1 to V6) plants can be stunted, yield-robbing tillers can be formed, or plants can be killed. This damage can easily be confused with billbug damage.
- Pre-tasseling stage (V14 to VT) ears can be crooked (banana ear) and kernels can be missing. This damage can easily be confused with damage from moisture or nutrient stress.
- Reproductive stage (R1 to R4) kernel size and weight can be reduced and secondary pathogens can be introduced that lead to aflatoxin or fumonisin contamination.

The all-important question by growers is “what is the threshold of brown stink bugs in corn.” The following information shows exactly that.

**Thresholds vary depending on stink bug pressure and are based on a 100-plant sample as described below.** These thresholds are not percentages, but numbers. If a plant has multiple stink bugs, this must be counted into the total. If the number of stink bugs exceeds the number in the “treat” category, treat the field even if 100 plants haven’t been sampled. If the number falls between the “treat” and “do not treat”, take more samples until a confident decision can be made.

Growth Stage	Area to sample	Do not treat	Take more samples	Treat
V1 to V6	Base of plant on stalk below lowest green leaf	$\leq 6$	$> 7$ to 12	$\geq 13$
V14 to VT	Stalk from first leaf above and below primary ear	$\leq 9$	$> 10$ to 17	$\geq 18$
R1 to R4	Stalk at one leaf above and two leaves below primary ear	$\leq 35$	$> 36$ to 51	$\geq 52$

For additional information on this topic, the following link will take you to the NC State University Corn Portal for the article "Stink Bug Management in Corn".

<https://corn.ces.ncsu.edu/stink-bug-management-in-corn/>.

### 2019 Northeast Ag Expo

The 2019 Northeast Ag Expo will be hosted by the Currituck County Cooperative Extension Center on the **Roberts Brothers Farm at 169 North Gregory Road, Shawboro**. The date of the event will be **Thursday, July 25, 2019**. The commodities featured at the field day will be corn and soybean. More information will be forthcoming.

### Testing for Pesticide License as Well as Pesticide License School

The Pasquotank County Center is hosting a test for people desiring to obtain a commercial pesticide or private (farmer) pesticide applicator as well as dealer license. The testing date is **Wednesday, November 13<sup>th</sup>**, and will take place at the North Carolina Cooperative Extension Center, Pasquotank County Center located at **1209 McPherson St, Elizabeth City**. **Testing will begin at 1pm**. Anyone coming for the testing should bring a picture ID, money (for testing fees) and a calculator. Also, if you are taking the test for a government job you should also bring the address for your place of employment since it will be needed when you sign up to take the test. **A review session in preparation for the testing will be held on Friday, November 8<sup>th</sup>, from 9:00am to 11:00am at the N.C. Cooperative Extension, Pasquotank County Center**. **If you plan to attend any of these, please call the office at 252-338-3954 to register.**

To order the manuals in preparation for the testing, please see the N.C. Department of Agriculture and Consumer Services webpage.

<http://www.ncagr.gov/SPCAP/pesticides/exam.htm>.

The N.C. Cooperative Extension, Pasquotank County Center in conjunction with the Pesticide Safety Education Program at NC State University and the NCDA&CS Pesticide Section will be offering a 2-day school for people who would like to obtain a private applicator (farmer) or commercial applicator/dealer license. **It will be held on Wednesday, August 7<sup>th</sup> starting at 8:30am and on Thursday, August 8<sup>th</sup> starting at 8:30am. The instruction will be on Wednesday and until lunch on Thursday, with testing taking place after lunch on Thursday**. **There are fees associated with the school.**

If you have questions about any of this information, please contact the office at 252-338-3954.

## Keeping Up with Your Pesticide Recertification Credits: Credit Status Report

**For those commercial pesticide applicators with a certification period that ends on June 30, 2019 or private (farmer) pesticide applicators whose certification period ends September 30, 2019, they must have required continuing education credits by those dates.** Commercial pesticide applicators must obtain the necessary credits in no less than two years. The North Carolina Department of Agriculture & Consumer Services, Pesticide Section provides a means for you to check your pesticide license credits received to date for the current recertification period. The URL for that site is as follows:

<http://www.ncagr.gov/aspzine/str-pest/pesticides/Recert/RTsearch.asp?LicNum>.

If you have any questions about this, please contact the Pasquotank County Center at 252-338-3954.

### **Last Private (Farmer) Pesticide Applicator Recertification Class for 2019 and Completing the Renewal Process**

If your private pesticide applicator license expires in 2019 and you have not already received the necessary training, then you need to come to the following training to get recertified. This is the last class for 2019. You must receive 4 hours of credit that includes the “V” and “X” training. To provide the 4 hours that private pesticide applicators will need, the Pasquotank County Center is conducting a class on **Tuesday, August 13<sup>th</sup> at the Pasquotank Extension Center** located at 1209 McPherson Street. If you plan to attend either, please contact the Pasquotank County Center to register.

Private pesticide applicators (farmers) that had to get recertified in 2019 and have already received their 2 hours of “V” and 2 hours of “X” training before the first of March will soon be getting their renewal cards that **they must fill out and return with their \$10.00 check to the address indicated on the form. Only after you have done this does the NCDA&CS Pesticide Section issue you a new pesticide card and consider you up to date.**

Date/Time	Location	Topic	Speaker	Credits Provided
Tuesday, August 13, 2019 5:30pm – 9:30pm 5:30pm – 7:30pm V 7:30pm – 9:30pm X  Commercial credits provided during X	Pasquotank County Center	Private (Farmer) Pesticide Applicator Recertification Class – V & X Training	Al Wood, Extension Agent, Pasquotank  Clay Hudson, NCDA&CS, Pesticide Section	<b>Private Applicator</b> 2 hours V 2 hours X <b>Commercial Applicator</b> 2 hours A, B, D, G, H, I, K, L, M, N, O, T

### **Pesticide Disposal Day in Perquimans**

The Perquimans County Center jointly with the Structural Pest Control and Pesticide Division, North Carolina Department of Agriculture and Consumer Services will be conducting a **Pesticide Disposal Day on Tuesday, April 9<sup>th</sup> from 10:00am to 2:00pm at Southern States in Hertford located at 330 Ballahack Rd.** This Pesticide Disposal Day will be for home gardeners, home owners, and farmers to dispose of unwanted, damaged, and obsolete pesticides free of charge that are in containers that are not leaking and have identification of the contents. **THIS PESTICIDE DISPOSAL DAY IS FOR PESTICIDES AND NO OTHER SUBSTANCES.** If you have any questions, contact Dylan Lilley at 252-426-5428.