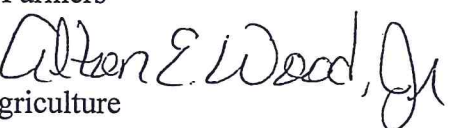


March 11, 2020

To: Pasquotank County Farmers

From: Alton E. Wood, Jr. 
Extension Agent, Agriculture
Pasquotank County

Re: **Day of Giving**
Testing for Pesticide License
Keeping Up With Your Pesticide Credits: Credit Status Report
Last Farmer Recertification Class for 2020
Plant Population and Seed Spacing Impact on Corn Yield
Soybean Variety Selection Tool
Preventing Off-Target Spray Drift: Observing Wind Speeds
Soybean Fungicidal Seed Treatments for Early Planted Soybean

Day of Giving

Do you love working with Cooperative Extension in Pasquotank County and want to give back? As part of NC State's Day of Giving, we're combining forces across the state to raise money for Extension, and we need your help to grow our impact! Localize your Day of Giving gift by contacting us for our direct link on March 25 to support Extension in Pasquotank County. We hope you will join us in #GivingPack to Extension!

Read more at: <https://intranet.ces.ncsu.edu/extension-day-of-giving-toolkit/#Assets>

Testing for Pesticide License

The Pasquotank County Center is hosting one more test for people desiring to obtain a commercial pesticide or private (farmer) pesticide applicator as well as dealer license. The testing will take place on **Wednesday, November 18, 2020**, and will take place at the N.C. Cooperative Extension, 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 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 13, 2020, from 9:00am – 12:00 noon at the N.C. Cooperative Extension, Pasquotank County Center. If you plan to attend, please call 252-338-3954 to register.**

In preparation for taking your test you may order manuals at the following website: <http://www.ncagr.gov/SPCAP/pesticides/exam.htm>. If you have questions about any of this information, please contact us 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, 2020 or private (farmer) pesticide applicators whose certification period ends September 30, 2020, 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 you have received for the current recertification period. The URL for that site is as follows: <http://www.ncagr.gov/SPCAP/LicenseSearch.htm> 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 2020

If your private pesticide applicator license expires in 2020 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 2020. 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 **Thursday, August 13th at the Pasquotank Extension Center** located at 1209 McPherson Street. If you plan to attend, please contact the Pasquotank County Center at 252-338-3954.

Date/Time	Location	Topic	Speaker	Credits Provided
Thursday, August 13, 2020 5:30pm – 9:30pm	Pasquotank County Center	Private (Farmer) Pesticide Applicator Recertification Class – V & X Training	Al Wood, Extension Agent, Pasquotank County Clay Hudson, NCDA&CS, Pesticide Section	Private Applicator 2 hours V 2 hours X
5:30pm – 7:30pm V				Commercial Applicator 2 hours A, B, D, G, H, I, K, L, M, N, O, T
7:30pm – 9:30pm X Commercial credits provided during X				

Plant Population and Seed Spacing Impact on Corn Yield

In the past, I have had questions about what the seed spacing of corn in inches would be for various populations at a given row width. **I have put together a table that gives the inches per seed for a range of plant populations and row widths (see Table below).**

Things to think about:

If your ears of corn in previous years are filled all the way to the tip, this may be a sign that you have not exceeded the yield potential of your soils, growing conditions, hybrids, and/or management practices and you could benefit from an increase in your corn plant populations.

- **Make certain that your planter and the operation of your planter (i.e. any part of your planter such as brushes, vacuum/pressure settings, or the operation of your planter such as planter speed) are correct** so as to provide precision seeding. Studies have shown that for each inch you deviate or vary from your intended plant spacing, you lose about 6 bushels of corn per acre.
- **If you feel that you are leaving bushels of corn on the table (i.e. you have not reached the yield potential of your corn crop), then you may want to increase your seeding rate.** I would advise that you make incremental increases in your plant population such as 2,000 seeds per acre or so.
- Some varieties have better standability than others and **attention should be given to your particular corn hybrids when determining seeding rates.** On our most “thirsty soils” in the county, I would not use less than 28,000 seeds per acre. On most of our corn acres, seeding rates of 32,000 to 34,000 seeds would work. On our most productive land, I would not use any more than 36,000 seeds per acre, unless you have tested your corn hybrids and/or land at those higher seeding rates as well as have a means for supplemental water.
- No matter what your row width, **it is not advisable to have an in-row spacing of no less than 6 inches** (i.e. 6 inches between seeds) unless you have had experience with a closer population and it works for you.

I give you this information just to let you think about what is best for your operation. If you have questions, please give me a call.

Row Width (Inches)	Inches Per Seed at Various Row Widths and Seeds Per Acre@							
	24,000 Seeds Per Acre	26,000 Seeds Per Acre	28,000 Seeds Per Acre	30,000 Seeds Per Acre	32,000 Seeds Per Acre	34,000 Seeds Per Acre	36,000 Seeds Per Acre	38,000 Seeds Per Acre
20	13.1	12.1	11.2	10.5	9.8	9.2	8.7	8.3
24	10.9	10.1	9.3	8.7	8.2	7.7	7.3	6.8
26.6	9.8	9.1	8.4	7.9	7.4	6.9	6.6	6.2
30	8.7	8.0	7.5	7.0	6.5	6.1	5.8	5.5
36	7.3	6.7	6.2	5.8	5.4	5.1	4.8	4.6
38	6.9	6.3	5.9	5.5	5.2	4.9	4.6	4.3
40	6.5	6.0	5.6	5.2	4.9	4.6	4.3	4.1

@ Regardless of the row width and seeding rate, seed spacing should not be less than 6 inches. For the seeding rates and row widths shown in this table, the values highlighted in gray are not less (or just about) 6.0 inches between seeds

Soybean Variety Selection Tool

I heard it said by people like Dr. Ron Heiniger and others that one of the most important decisions that farmers make is what hybrids/varieties they will plant. There are a number of reasons for this:

- **Yield potential is determined** by the variety/hybrid you choose.
- **Considerations beyond yield potential are important** such as the herbicide system you need, the disease resistance package, and its ability to stand so as to be able to successfully harvest it, grain quality, etc.
- **Is it of a maturity that will work with your farming operation?**

One of the tools that has been developed by the NC Soybean Producers Association using data from the NC State Official Variety Testing (OVT) program is the Soybean Variety Selection Tool. This tool allows you to filter for varieties based on such things as maturity group, growth habit, herbicide trait package, disease resistance and beyond. Once you have filtered for the parameters of interest, you can greatly reduce the amount of yield data you are looking at. To try this amazing tool, use the following link:

<https://officialvarietytesting.ces.ncsu.edu/soybean-variety-selection-tool/>

There is an excellent tutorial available on using the Soybean Variety Selection Tool on the NC Soybean Producers Association website: <https://ncsoy.org/varietyselector/>.

If you have any questions about it, call the Pasquotank County Center at 252-338-3954 and ask for me.

Preventing Off-Target Spray Drift: Observing Wind Speeds

There are many factors that can affect the potential for off-target spray drift. They include the following:

- **Spray droplet size:** smaller the droplet the farther it can travel.
- **Nozzle operating pressure:** the higher the pressure the smaller the droplets.
- **Height of the boom:** the higher the boom the more chance of drift. Height should be recommended height for nozzles.
- **Temperature Inversion:** cooler air at the ground with warmer air higher will allow spray droplets to hover closer to the ground instead of rising.
- **The speed of the sprayer (mph):** causing shearing of water from nozzles into smaller droplets.

But one other factor is wind speed. We all are very aware of how windy our area is, but I wonder if we truly understand the extent/frequency of high wind speeds. Off-target spray drift, which is the movement of spray droplets off of the site where the pesticide is desired, may be more of a problem than we realize. I selected the average wind speed for Elizabeth City for the months of June, July, and August of 2019, which is when much of our pesticide applications are made on our crops in the county.

For the year 2019 for the months of June, July, and August, the percent of days for each month that was greater than 10 mph was 36%, 25%, 13%, respectively. Especially for herbicides, many of them do not recommend spraying above 10 mph. Also, for certain herbicides, there are concerns about wind speeds below 3, which could indicate the presence of a temperature inversion.

The point that I make in all of this is that we need to be mindful of all the factors that can contribute to off-target spray drift, including wind speed. It may pay to invest in an anemometer that measures wind speed, especially so that you can document it for your auxin herbicide application records.

Number of Days When Average Wind Speeds Are Above 10 MPH for Elizabeth City 2019	
Month	Number of Days Wind Speeds Greater Than 10 MPH*
June	11
July	9
August	5

*Based on average wind speeds

Soybean Fungicidal Seed Treatments for Early Planted Soybean

Many growers in the county and region have proven that the early planted soybeans (planted before May 1), especially coupled with early maturing varieties has proven to produce higher yields than what has routinely been achieved. As a result of the adoption of this system, people are either trying and/or asking about various production practices to help insure the yield boost. One of those inquiries has been seed treatments.

In tests conducted by Dr. Jim Dunphy from 2014 to 2018 evaluating various non-foliar yield enhancement products in 15 different environments and analyzed, summarized and published by Dr. Vann in 2019 found that fungicidal seed treatments did not impact soybean yield. However, planting dates for these tests ranged from late May through early July. The question that arises about the value of fungicidal seed treatments at earlier soybean planting dates.

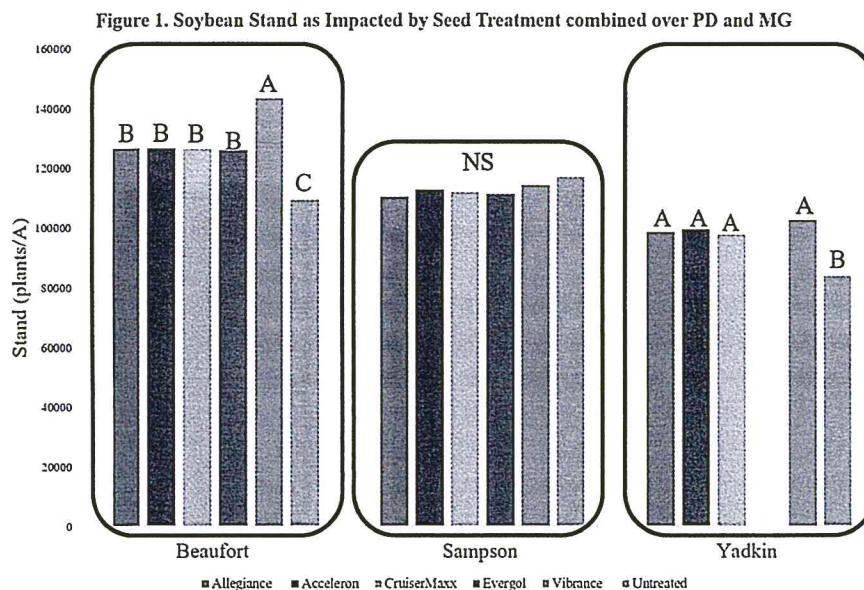
In 2019 Dr. Vann, Dr. Foote, and Dr. Thiessen started a multi-year test of soybean seed treatments for 3 planting dates (late March, mid-April, and mid-May), 3 soybean maturity groups (III, IV, and V) and 5 fungicide seed treatments (Allegiance, Accelaron, Evergol, Vibrance TRIO, CruiserMaxx) compared to an untreated control, which was conducted at 3 location (Yadkin, Sampson, and Beaufort counties). This work will be repeated in 2020 with added planting dates in June and July.

Before diving into the results of this study, it must be known that this is one year's data and as such is considered preliminary. With 2 more years of data, the results should be more definitive. **For two of the three locations, seed treatments significantly impacted soybean**

stand (plant population). At both locations, the untreated check had reduced stand compared to the untreated control (Figure 1). (see graphs below). **Seed treatments significantly impacted yield at 2 locations with the untreated check being significantly lower than all of the treatments at the Sampson location and 4 of the treatments at the Beaufort location** (see graphs below) Soybean yield was protected by the use of a fungicidal seed treatment at two locations, and on average soybean yield by 6-7 bu/A higher where a fungicidal seed treatment was used (Figure 2).

The greatest yield benefit from the use of a fungicidal seed treatment was with the late March planting dates (9.1 bu/A), although there was still a 5.9 bu/A yield protection when soybeans were planted in mid-April and a 2.4 bu/A yield protection when the soybeans were planted in mid-May If the yield protection of these fungicidal seed treatments is maintained at these levels with subsequent tests, it definitely would be economically beneficial to use a fungicidal seed treatment with soybean planting dates prior to mid-May It is important to note there has been no documented soybean yield benefits in research trials throughout the Southeast from the use of an insecticidal seed treatment (<https://soybeans.ces.ncsu.edu/2020/01/save-money-and-slow-resistance-by-skipping-insecticidal-seed-treatments-in-soybean/>).

Without knowing all the possible choices available to growers, I have provided data (see tables below) that includes the efficacy ratings for a number of different fungicidal seed treatments. Not all seed treatments will control all or the same fungi. Just remember that you want a seed treatment that controls fungi such as Rhizoctonia and Fusarium as well as oomycetes (Pythium and Phytophthora; they were called fungi when I took Plant Pathology) and this will require a premix of at least a couple of fungicides.



Management of Soybean Seedling Diseases

Fungicide Efficacy for Control of Soybean Seedling Diseases – January 2019

The members of the Identification and Biology of Seedling Pathogens of Soybean project funded by the North Central Soybean Research Program and the United Soybean Board, and the North Central Regional Committee on Soybean Diseases (NCERA-137) have developed the following ratings for how well fungicide seed treatments control seedling diseases of soybeans in the United States. Efficacy ratings for each fungicide active ingredient listed in the table were determined by field-testing the materials over multiple years and locations by the members of this group, and include ratings summarized from national fungicide trials published in Plant Disease Management Reports (and formerly Fungicide and Nematicide Tests) by the American Phytopathological Society at <http://www.apsnet.org>. Each rating is based on the fungicide's level of disease control, and does not necessarily reflect efficacy of fungicide active ingredient combinations and/or yield increases obtained from applying the active ingredient.

The list includes the most widely marketed products available. It is not intended to be a list of all labeled active ingredients and products. Additional active ingredients may be available, but have not been evaluated in a manner allowing a rating. Products listed are the most common products available as of the release date of the table; all available products may not be listed. Additional active ingredients may be included in some products for insect and nematode control, however; only active ingredients for pathogen control are listed and rated.

Many active ingredients and their products have specific use restrictions. Read and follow all use restrictions before applying any fungicide to seed, or before handling any fungicide-treated seed. This information is provided only as a guide. It is the applicator's and users legal responsibility to read and follow all current label directions. Reference in this publication to any specific commercial product, process, or service, or the use of any trade, firm, or corporation name is for general informational purposes only and does not constitute an endorsement, recommendation, or certification of any kind by members of the group, or by the North Central Soybean Research Program. Individuals using such products assume responsibility for their use in accordance with current directions of the manufacturer. Efficacy categories: E = Excellent; VG = Very Good; G = Good; F = Fair; P = Poor; NR = Not Recommended; NS = Not Specified on product label; U = Unknown efficacy or insufficient data to rank product.

Ratings of NR may mean that the fungal group listed is not a target of the specific fungicide active ingredient.

Please note: Efficacy ratings may be dependent on the rate of the fungicide product on seed. A number of different species of *Pythium* and *Fusarium* impact seed and seedling health in soybean. Therefore, wide ranges in efficacy may be observed in fungicide active ingredients listed in the table. This is why several fungicide active ingredients are combined in seed treatments to provide protection to a broader spectrum of pathogens. Contact your local Extension plant pathologist for recommended fungicide product rate information for your area.

Fungicide active ingredient	<i>Pythium</i> sp. ¹	<i>Phytophthora</i>	<i>Rhizoctonia</i> sp.	<i>Fusarium</i> sp. ^{1,3}	Sudden death syndrome (SDS) (<i>Fusarium virguliforme</i>)	<i>Phomopsis</i> sp.
Azoxystrobin	P-G	NS	VG	F-G	NR	P
Carboxin	U	U	G	U	NR	U
Ethaboxam	E	E	NR	NR	NR	NR
Fludioxonil	NR	NR	G	F-VG	NR	G
Fluopyram	NR	NR	NR	NR	VG	NR
Fluxapyroxad	U	U	E	G	NR	G
Iponazole	P	NR	F-G	F-E	NR	G
Mefenoxam	E ²	E	NR	NR	NR	NR
Metalaxyl	E ²	E	NR	NR	NR	NR
Oxathiapiprolin	P-G	E	NR	NR	NR	NR
PCNB	NR	NR	G	U	NR	G
Penflufen	NR	NR	G	G	NR	G
Prothioconazole	NR	NR	G	G	NR	G
Pyraclostrobin	P-G	NR	F-G	F	NR	G
Sedaxane	NR	NR	E	NS	NR	G
Thiabendazole	NR	NR	NS	NS	P	G
Trifloxystrobin	P	P	F-E	F-G	NR	P-F

¹Products may vary in efficacy against different *Fusarium* and *Pythium* species.

²Areas with mefenoxam or metalaxyl insensitive populations may see less efficacy with these products.

³ Listed seed treatments do not have efficacy against *Fusarium virguliforme*, causal agent of sudden death syndrome.

Fungicide(s)	
Product/Trade name	Active ingredient
Acceleron	DX-612 Fluxapyroxad DX-309 Metalaxyl DX-109 Pyraclostrobin
Allegiance FL	Metalaxyl
Allegiance LS	Metalaxyl
Apron XL LS	Mefenoxam
ApronMaxx RFC	Fludioxonil Mefenoxam
ApronMaxx RTA	Fludioxonil Mefenoxam
CruiserMaxx	Fludioxonil Mefenoxam
CruiserMaxx Advanced or Cruiser Maxx Plus	Fludioxonil Mefenoxam
CruiserMaxx Vibrance or Vibrance Trio	Fludioxonil Mefenoxam Sedaxane
Dynasty	Azoxystrobin
EverGol Energy SB	Metalaxyl Penflufen Prothioconazole
ILeVO	Fluopyram
Inovate Pro	Ipconazole Metalaxyl
Intego	Ethaboxam
Lumisena	Oxathiopiprolin Metalaxyl
Maxim 4FS	Fludioxonil
Mertect 340 F	Thiabendazole
Prevail	Carboxin Metalaxyl PCNB
Trilex 2000	Metalaxyl Trifloxystrobin
Vibrance	Sedaxane
Warden CX	Fludioxonil Mefenoxam Sedaxane
Warden RTA	Fludioxonil Mefenoxam

