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To: Pasquotank County Farmers

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Re: Critical Stages of Corn Development
Stink Bugs: Be on the Watch for Them in Corn
National Corn Growers Association Information on Submitting Entries
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Critical Stages of Corn Development

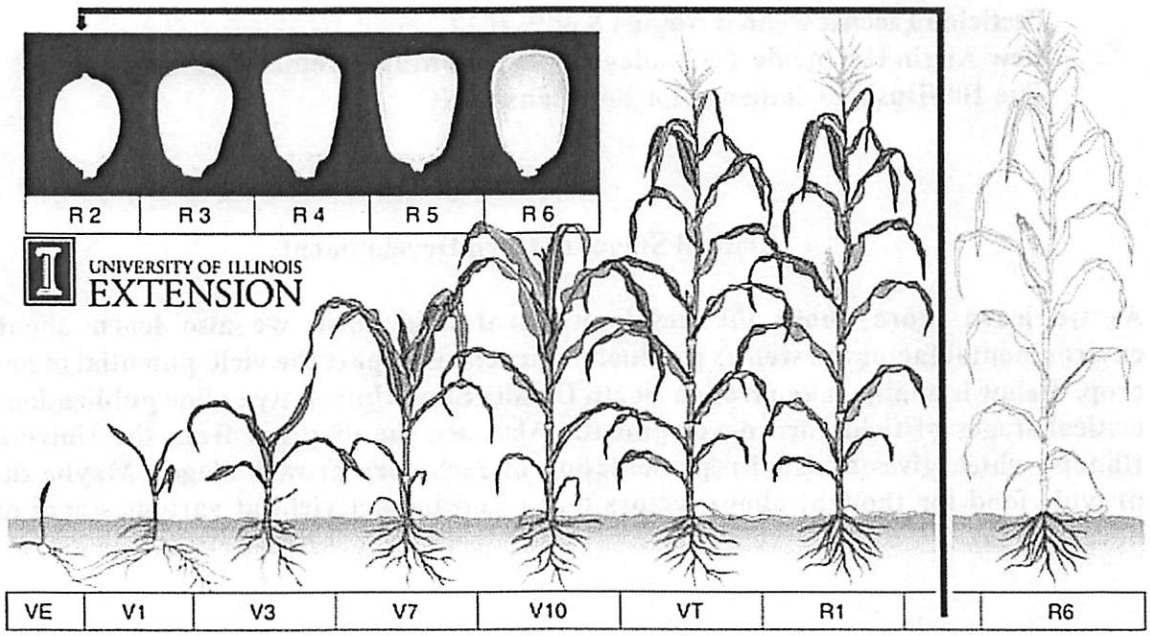
As we learn more about the development of field corn, we also learn about how environmental factors as well as production practices impact the yield potential of our corn crop. Below is a table taken from a North Dakota State University online publication about critical stages of field corn development. Also, see the diagram from the University of Illinois, which gives a visual representation of each corn growth stage. Maybe this will provide food for thought about factors that could impact yield at various stages of crop development.

Employment and program opportunities are offered to all people regardless of race, color, national origin, sex, age, or disability. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.

Critical Field Corn Growth Stages @

Growth Stage	Days after Emergence	Growth Event	Importance
V3	9 – 12	Seminal root system and ear shoots initiated	Seedling vigor seen, ears established
V4 to V5	14 – 21	Ear shoot initiation complete	Number of kernel rows determined
V6	21 – 25	Nodal root system established	Plants ability to take up nutrients and water is established
V12 to V14	42 – 49	Number of ovules determined	Number of kernels per row determined
R1 (silking)	63 – 68 days	Pollen shed begins, brace roots established, near maximum root mass	Kernel fertilization, support ear weight, kernel fill

@ In order to determine the growth stage of corn, many people use the leaf collar method. The collar is where the leaf blade visually breaks away from the sheath and the stalk of the corn plant is visible. Vegetative growth stages are based on the number of visible collars. So the number of visible collars is equal to vegetative growth stage. The first leaf of the corn plant has a rounded tip, which is useful for identification. Subsequent leaves have pointed tips. Remember, a new growth stage is reached for each new leaf that has a visible collar.



Stink Bugs: Be On the Watch for Them in Corn

Last year (2016) did not prove to be as bad for stink bugs as 2015, but there were some "hot spots" in the region. There have been a few reports of brown stink bugs in wheat this year. It is still left to be seen how they will play out in this year's corn crop. **The main point for addressing this topic is to get it on your "radar".**

When I have asked Dr. Reisig about when to scout for stink bugs in corn (past the seedling stage), his response was **"from when the corn is waist tall to tasseling".** Another indicator as to when and where to check for stink bugs is **7 days after wheat harvest in corn fields next to wheat fields.** But from my observations from previous years, **I would also be checking corn next to woods, weedy ditches, and hedge rows.**

The tricky part is the timing, of the insecticide treatment. You do not want to treat too early and then have another group of stink bugs come in after the insecticide has dissipated. **As for a threshold value, I would use one stink bug per 10 plants when the ear is forming (that is from waist high corn to tasseling).** The products of choice would be the pyrethroids. Generally speaking, you are looking at about a week of control from these products, but they can reinvade fields that have been treated. Just make certain that it is a product labeled for field corn. For additional information on stink bugs in corn, go to the following link

https://entomology.ces.ncsu.edu/2016/05/how-to-avoid-a-stink-bug-disaster-in-corn-2/ .

National Corn Growers Association: Information on Submitting Entries

During the 2016 producer meetings, Dr. Ron Heiniger, Crop Science Specialist, NCSU, said that 2016 would be the year of the corn. Last year's growing season did throw us some "curves", although we did have a reasonably good crop. This year's crop looks as promising, if not more so than 2016.

With the potential for a good corn crop, I wanted to make people aware of the opportunity to participate in the corn yield contest sponsored by the National Corn Growers Association. **The early entry deadline is Friday, June 30, 2017 and the final deadline for entries is Monday, July 31, 2017.** For more information, you can go to the website at: http://www.ncga.com/for-farmers/national-corn-yield-contest.

In my Extension career, I have had some goals in mind. In recent years, I have updated some of those because I have seen them become a reality. My new goal for corn is 300 bushels per acre. I am hoping that this may be the year.

Wheat Crop: Keep Watching the Crop

We had ideal conditions during the planting of the wheat crop, but then had some wet periods after planting. It did dry out enough and temperatures did stay mild during the winter growing season for the wheat to develop really good tiller numbers generally speaking. In March a cold spell did give us a scare and may have damaged some wheat. The mild moist weather since

heading has provided for very favorable conditions for grain fill. Among the list of diseases, we have seen this growing season are powdery mildew, leaf rust, stripe rust, scab, and Stagnosporum nodorum blight (SNB). Although there is a mix of a few bad and a lot of potentially good fields, there are a few fields that have the potential for outstanding yields. With this wheat crop, I leave you with some thoughts.

One thing that I would keep in mind is scab. If you noticed fields with a significant amount of the prematurely brown heads, then make a mental note of it. One thing that can be done to help minimize the presence of the scab in the the harvested wheat is to **increase the fan speed to blow out the light weight scab damaged kernels.** Even if you blow out some small kernels not affected by scab, it is better to lose those while getting rid of the scab infected kernels. One other point about heads turning brown before crop maturity is that frosts and freezes can also cause them. **There are two things to look for to tell the difference between scab damaged and frost/freeze damaged wheat heads.** Heads damaged by frost/freeze should have shown up several weeks ago where as scab will show up prior to crop maturity. Secondly, scab infected heads may have a pink tint to them, especially on the husk surrounding the kernel, produced by the organism causing the disease.

One other pest that I want to mention is ryegrass. For the last couple of years, we have seen more problems with it. Part of this may be due to the mild wet weather encouraging several groups of new plants to emerge. There has been one case of herbicide failure this year that seems to suggest that we may be getting resistance. This is a weed that we are going to have to pay closer attention to.

Why Use a Pre-Emergence Herbicide on Soybean Fields with Herbicide Resistant Weeds

Although we do not have as bad a problem with glyphosate resistant Palmer amaranth as some areas, we do have to deal with it and other herbicide resistant weeds. In addition, to herbicide resistant Palmer amaranth, we have herbicide resistant common ragweed, and in the region, glyphosate resistant water hemp has been identified as well. Most of us have heard about the strategies to deal with these very troublesome weeds. But I did want to emphasize a couple of points about them.

One of the strategies to use in dealing with herbicide resistant weeds, is to use multiple modes of action. Modes of action is nothing but the way the herbicide kills the weeds. With herbicides, the mode of action could be interrupting photosynthesis, (process for making food for the plant), inhibiting cell division (needed for growth), etc. By using different modes of action, you are less likely to select for plants (ones left surviving) that have genes that allow the plant to not be killed by the herbicide/pesticide used.

The other strategy is to use herbicides with different times of application such as pre-emergence herbicides vs post-emergence herbicides. Although not always true, by using pre-emergence herbicides in addition to a post-emergence herbicide, you can use a different mode of action as well as buy yourself more time before having to apply your post-emergence herbicide.

Hopefully this will keep you from being blindsided with weeds too big to be controlled, especially with the Palmer amaranths that grow so fast.

If you have problems with herbicide resistant weeds and you are not currently using a pre-emergence herbicide, then you may want to consider using one. The use of both a pre-emergence and post-emergence herbicide is like the boxer using both a left and right hook to bring down his opponent.

Asian Soybean Rust 2017:
Be Vigilant, Be Prepared, but Wait Until You See the Whites of It's Eyes

So far this year, there has not been much reported about Asian Soybean Rust. It has only been found on kudzu to date. I have come to the conclusion, unless something about the rust pathogen or the environment changes (i.e. major climate changes), this is something that most likely will not be a problem that will require treatment most years (at least for our region of the world), but if you let your guard down, it can EAT YOUR LUNCH if it comes into the region as a major infestation.

That is the reason for my title of this article. We must be vigilant. We include all of the agricultural community. We must be monitoring fields for its presence. Being prepared includes having in place the items or means for treating this disease including sprayers, proper nozzles, etc. Lastly, wait until you see the whites of it's eyes means to not make premature applications for the rust, which could possibly mean unnecessary expenses.

A source that I use to monitor the current situation with Asian soybean rust is the USDA Integrated Pest Management Pest Information Platform for Extension and Education. It's URL is as follows: http://sbr.ipmpipe.org/cgi-bin/sbr/public.cgi.

2017 Northeast Ag Expo

The date for the 2017 Northeast Ag Expo is fast approaching. Perquimans County will host the event to be held on **Thursday, July 27 and the cooperator is R & R Farms in Belvidere, NC.** This year's event will feature double-crop soybean, corn and grain sorghum. There will also be **a trade show** with lots of educational booths and vendors displaying their products We hope that you will put this event on your calendar and make plans to attend. You can go to our Northeast Ag Expo website (**wwww.ncneagexpo.com**) as new developments and information are made available.

Last Recertification Class for Farmers with Pesticides License Expiring in 2017

If you are a private pesticide applicator (farmer) and your pesticide license expires in 2017 and you have not already attended all the training needed, then you need to take notice of this information. You must receive 4 hours of credits that includes the "V" and "X" training. To provide the 4 hours that private pesticide applicators will need, **the Pasquotank County Center is conducting their last class on Tuesday, August 15th.**

Date	Location	Program	Presenter	Credits
Tuesday, August 15, 2016 5:30 – 9:30pm 5:30 – 7:30pm (V) 7:30 – 9:30pm (X) Commercial credits provided during X	Pasquotank County Center	Private Pesticide Applicator (Farmers) Recertification Class "V" and "X"	Al Wood, Extension Agent, Agriculture	2 hours V 2 hours X ***(Includes commercial categories):*** *Aquatic (A), Dealer (D), Forest (G), Right-of-Way (H), Regulatory (I), Ornamentals & Turf (L), Demonstration & Research (N), and Ag. Pest –Plant (O)*

Testing for Pesticide License

The Pasquotank County Center is hosting a testing for people desiring to obtain a commercial pesticide or private (farmer) pesticide license on **Wednesday, July 12, 2017.** The testing will take place at the Pasquotank County Center located at **1209 McPherson St, Elizabeth City and will begin at 1:00pm.** 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 Thursday, July 6, 2017 from 9:00am – 11:00am at the Pasquotank County Center.**

Pesticide School, August 8th & 9th 2017

The Pasquotank County Center in conjunction with the Pesticide Safety Education Program at NC State University and the NC Department of Agriculture and Consumer Services will be offering a 2-day school for those people that would like to obtain a private applicator or commercial applicator/dealer license. **The date of this event will be Tuesday, August 8th and Wednesday, August 9th.** If you plan to attend this school, there are books that you need to obtain and fees not only for the manuals, but for the school, and to take the test. To order the manuals as well as to register for the school, the following link may be used:

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

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

New Auxin Herbicide Technologies: Eleven Major Points to Remember

With the increasing number of weeds developing resistance to glyphosate, agrichemical companies have been searching for answers to those problems. One of those answers has been the development of crops resistant to 2,4-D or dicamba. Several companies have developed these technologies. As with any new technologies, it is important to understand how to use it effectively as well as safely. Without getting into the details of these new auxin herbicide technologies, there are **11 major points to remember.**

1. **The producer, certified applicator, or person responsible for the application of this product on cotton or soybeans, in-crop, must attend <u>Auxin Herbicides – Best Management Practices</u> training that is approved by the North Carolina Department of Agriculture."**
2. **Use only approved herbicide formulations.**
3. **Check the weather including, wind speed, potential of rain after the application, temperature and humidity and potential of temperature inversions at the time of application.**
4. **Observe buffers.**
5. **Be aware of your surroundings. Know whether there are sensitive crops/plants adjacent to the application site.**
6. **Only use approved nozzles.**
7. **Know tank mix restrictions.**
8. **Make timely applications to avoid resistance.**
9. **Use full rates.**
10. **Clean entire sprayer properly.**
11. **If in doubt about anything dealing with these new auxin herbicide technologies at the time of application, do not spray until you have your questions answered.**

Many of the points covered in this article were taken from the "Take Action Herbicide Management" fact sheet "Managing 2,4-D and Dicamba in Enlist and Xtend Soybean. It can be found at the following webpage:

http://takeactiononweeds.com/managing-24-d-and-dicamba-fact-sheet/

The 100-Bushel Challenge for Soybeans

I would like to remind everyone of the opportunity available to NC soybean producers through the NC Soybean Producers Association one-time "100-bushel soybean challenge." To qualify for this challenge, there are certain requirements that must be met. Below is information on those requirements.

The North Carolina Soybean Producers Association and North Carolina Cooperative Extension Service announced in the March 2006 Soybean Scene a one-time challenge contest for the farmer who first reaches or exceeds 100 bushels of soybeans per acre on a measured 3-acre plot.

The top prize of $2,500 (and, if an American Soybean Association member at the time the crop is planted, an additional $2,500) will be awarded to the farmer with the highest yield if the 100-bushel yield is achieved by more than one farmer in the same growing season. Once the 100-bushel barrier has been broken in North Carolina, the contest will end.

Following are the special rules for applicants to the contest.

Special Rules and Certification Form for NC Soybean Contest entries that may exceed 100 Bu/A

Special Rules: To be eligible for the $2,500 (or $5,000) bonus for having the highest yield over 100 Bu/A (a one-time bonus); the field must ***be measured by 2 people who reside in 2 different counties.*** *Both must be a member of their county's Soybean Contest Committee, and* ***at least one must be a county cooperative extension agent.*** *Both will sign the certification form attesting to the accuracy of the data used to calculate yield. The names of the two who measured the field, the person who weighed the harvested soybeans, and the person who determined moisture (to the nearest tenth of a percent) and foreign matter (to the nearest whole percent) of the harvested soybeans will be noted on the contest application, and will be available to the public for all yields of 100 Bu/A or more. Field measurements must be made with a tape measure (not a measuring wheel), and determined to the nearest inch, tenth of a foot, or link. Deviations from the one-*contiguous-area rule will not be permitted.

As mentioned earlier in this article, to get the full monetary prize of $5000, you have to be a member of the American Soybean Association (ASA) at the time of planting. The following web address takes you to the ASA webpage where you can pay your fees to be a member: https://soygrowers.com/online-membership/.

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