



FIELD CROPS NEWSLETTER

March 2014



Corn Plant Populations

Melissa E. Huffman
Extension Agent,
Agriculture -
Field Crops

Contact Us:
NCCE-Onslow
County
4024 Richlands Hwy.
Jacksonville, NC
28540

(910) 455-5873
(910) 455-0977 Fax
<http://onslow.ces.ncsu.edu>

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Appropriate plant populations vary by soil type and by hybrid selection. Plant populations have a strong influence on corn yields. Research has shown that optimum final plant stands for our area are around 30,000 plants per acre. Be sure to match your population to your soil type and hybrid. If you have productive soils, then consider at least adding an increase of 10 to 15% to your current population in a field or two and see what kind of results you get. The following table shows plant spacing for various populations on both 30 and 38 inch rows. It is likely that you will gain greater benefits from the higher populations on narrower row spacing. However, there are also yield benefits on wide rows. Please consider increasing your plant populations for 2014.

In-Row Spacing (inches)

Plant	38" rows	30" rows
20,000	8.25	10.45
22,000	7.50	9.50
24,000	6.88	8.71
26,000	6.35	8.04
28,000	5.89	7.47
30,000	5.50	6.97
32,000	5.16	6.53
34,000	4.86	6.15

If you look hard enough for Hessian fly you will almost ALWAYS find some. At this time, the Hessian fly is in the pupal (resting) stage. The pupa is a dark brown case that resembles flax seed. If present, the pupa will be found between the sheath and the stem near the base of the wheat plant. You should be scouting your fields now to determine whether or not your wheat field is infested.

The suggested pupa threshold is 10% infested plants when there are “friendly conditions” OR 20% infested plants when there are no “friendly conditions.” “Friendly conditions” include 1 or more of the following: A Hessian fly susceptible wheat variety, no Gaucho or Cruiser seed treatment, wheat/wheat rotation (especially no-till), wheat emerged before November, and wheat fields planted near last year’s wheat fields.

If a spring infestation of Hessian fly is present in your wheat field, tillering will be poor, plants will look yellow and unthrifty, have small heads, will be noticeably shorter, and lodging will be evident. If any of these symptoms are present and you have gone out and found Hessian fly pupa or larvae, it might benefit you to apply an insecticide. In the spring, apply an insecticide as the pupa hatch and flies emerge. *Keep in mind that spring insecticide applications are only beneficial if you have heavy infestation.* Flies typically emerge when temperatures warm in mid-to-late March.

Insecticide	Amt of Formulation per Acre
Baythroid XL	2.4 fl oz
Tombstone	2.4 fl oz
Karate, Lambda-cyhalothrin, or Silencer	3.8 fl oz
Warrior II or Karate Z	1.92 fl oz
Mustang Max	4 fl oz

The 2-winged fly is small, long-legged, and looks like a small mosquito. The fly is a weak flyer and lives only about 2-3 days. Flies will deposit yellow-orange eggs singly or end to end between the veins on the upper surfaces of young wheat leaves. The eggs will hatch within a few days and the tiny maggots will migrate to stem joints where they feed for 4-6 weeks. The maggot is about $\frac{1}{4}$ -inch long when fully grown. Maggot feeding usually results in weakened stems and small, poorly filled grain heads with low-quality kernels. Weakened stems may result in lodging of your wheat plant.

Adult Hessian fly



Wheat needs nitrogen in spring; submit samples now

*Brenda Cleveland, Plant/Waste/Solution/Media Section chief
NCDA&CS Agronomic Services Division*

RALEIGH — The N.C. Department of Agriculture and Consumer Services reminds growers that properly timed spring nitrogen applications are essential to the growth and development of wheat. Assessing nitrogen needs now will optimize yield later.

To decide how much spring nitrogen to apply, wheat specialists advise submitting two samples of wheat leaves to the department's Agronomic Services Division for testing. One sample will be used to measure plant nutrient content, the other to measure biomass. Both tests are necessary to obtain the most precise recommendation. The fee is \$5 per sample for N.C. residents and \$25 per sample for residents of other states.

Tissue sampling should be done when wheat reaches Zadoks growth stage 30 (GS-30)," said Michelle McGinnis, the division's field services chief. "To determine growth stage, wait until wheat begins to stand up tall and straight. Then pull several plants, split the stems from the top to the base and look for the growing point. Before GS-30, it will be just above the roots; at GS-30, it will have moved about one-half inch up the stem (Figure 1)."

Agronomists expect most wheat in the eastern and piedmont regions of the state to reach GS-30 sometime in early to mid-March.

Applying nitrogen earlier than that could cause tender new growth that would be susceptible to injury during cold snaps. On the other hand, waiting until after jointing increases the chances of damage by application equipment.

"Once GS-30 is reached, growers should immediately collect tissue samples and matching above-ground biomass samples," McGinnis said. "This is especially true if wheat is lush due to warmer weather or early planting dates. If the crop's need for nitrogen is not met at this time, then tillers will abort and yield will be reduced."

To tissue sample, cut wheat plants about one-half inch above the ground in 20 to 30 representative areas throughout a field. Generally, two large fistfuls of leaves will make a good sample. Remove dead leaves and weeds before placing the sample in a paper bag.

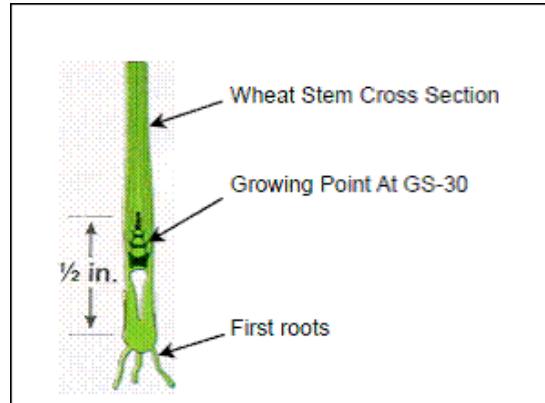


Figure 1. Location of wheat growing point at GS-30.

A biomass sample, on the other hand, should contain all the above-ground wheat-plant tissue from one representative, 36-inch section of row. In broadcast fields, collect all the plants from one square yard. Place the sample in a paper bag, and write the sample ID from the corresponding tissue sample and the word “biomass” on the bag.

Collecting biomass samples has only recently become part of the nitrogen determination process. Dr. Randy Weisz of N.C. State University developed a method of using biomass weight along with tissue test results to calculate more site-specific nitrogen recommendations. His approach takes into account crop-growth differences due to planting date, row spacing and moisture levels. For wheat grown on large acreages of poorly drained soils, however, growers should consult with an agricultural adviser about whether this method is likely to be useful.

Upon receiving the NCDA&CS plant analysis report, growers should first look for the biomass and nitrogen percentage values. These values and certain crop planting details help determine the appropriate nitrogen rate, based on Weisz’s interactive tool. This method is explained fully online at www.smallgrains.ncsu.edu/_Pubs/PG/Nitrogen.pdf.



Grain Sorghum Considerations

Variety Selection and Planting

Research in North Carolina has shown grain sorghum can be planted from May 1 through July 1 with the expectation of high yields. Grain sorghum planted after July 15th could experience problems with frost and freeze before maturity. Most varieties available in North Carolina are late maturity hybrids. Early maturing varieties are not recommended for May planting. Plant an early to medium maturity hybrid in July.

Grain sorghum can be seeded in rows or drilled. Row widths from 30 to 38 inches have more consistent yields in sandy soils and also have the advantage of layby nitrogen and herbicide applications. Sorghum drilled in 7 to 15 inch row widths maximize yields in good soils with nutrient and water holding capacities. Sorghum seed should be planted at 1 – 2 inches deep depending on soil moisture and residue. Final plant populations should be in the 80,000 to 90,000 plants per acre range if planted from May 1 through June 15. After June 15, seeding rates should be increased by 20,000 seed per acre.

Fertilization

NCDA & CS grain sorghum recommendations for PH, phosphorus, and potassium are the same as corn, wheat, and soybeans. Soil test should be used for nutrient recommendations. If a soil test results are not available 20-30 lbs. /acre of phosphorus and 50-70 lbs./acre of potassium can be applied. The general recommendation for nitrogen is 80-120 lbs./acre. On sandy soils 20 lbs. of sulfur is recommended. Apply 25% of the nitrogen at planting and the remainder at layby. Layby nitrogen can be applied when sorghum is 8 to 12 inches tall.

Weed Management

Planting grain sorghum can improve weed management due to the option to use herbicides not used in soybeans and cotton primarily for control of Palmer amaranth. Starting weed free as with other crops is also important in managing weeds in grain sorghum; that requires tillage or burndown herbicides to eliminate existing weeds. Following planting, a preemergence herbicide program should be used in conjunction with Concept treated seed. Herbicides like Bicep (Dual + atrazine) or Warrant + atrazine should be applied. When sorghum reaches 6-8 inches tall, a postemergence over the top application of atrazine + 2,4-D amine can be applied to kill emerged weeds and add some residual control. Do not apply if sorghum is greater than 12 inches. Do not apply more than 2.5 lbs. active ingredient of atrazine per season. When sorghum reaches 15 inches tall, and weeds and grasses are less than 2-4 inches, Linex can be applied post- directed no higher than 3 inches up the stalk.



Pesticide Re-Certification Classes

March 4 2 hrs V credits 6:00pm – 8:00pm	March 18 2 hrs N O D X credits 6:00pm – 8:00pm	March 27 2 hrs L N D X credits 10am – 12pm
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All three classes will be held at the Onslow County Extension Office. Please RSVP to Nita. Feel free to contact me if you have questions about how many credits you have or need. ☺

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2013 Agricultural Awards Banquet

The annual Onslow County Agricultural Awards Banquet was held on February 18th at the Onslow County Multipurpose Complex. Recognition was given to the various groups of volunteers, on-farm cooperators, and yield contest entrant that give of themselves to support and expand the work of the NC Cooperative Extension here in Onslow County.

Special recognition was given to **Master Gardener Tom Nicoll** for 2000+ hours of service.

Amy Borsay and Rebecca Ingram were both named the **2013 Master Gardener Volunteer of the Year** for their devotion to increasing the knowledge level of other master gardeners and the public.

Several local famers received awards for Crop Production Contests:

Wheat Yield Champion: **George Pierce** planted Coker 9978 with 90.82 bushels per acre. The runner-up was **Jack Pierce** who also planted Coker 9978 and produced a yield of 56.25 bushels per acre.

Corn Yield Champion: **Timothy Huffman** planted AgVenture RL 9583 and produced a yield of 222.5 bushels per acre. The runner-up planted Seed Consultants 11HR63 and produced a yield of 217.67 bushels per acre; the runner up was **Andy Weston**.

The Onslow County Agricultural Hall of Fame Award was begun in 1984. The nominees are selected and voted upon by past recipients of the Master Farmer Award or the James R. Strickland Service to Agriculture Award.

In order to be eligible for the Service to Agriculture Award, the nominee should contribute to the promotion or preservation of the agricultural industry in Onslow County. This year's inductee was: **Mr. Jerome Shaw for Service to Agriculture.**



