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Turn ROWS

Newsletter for the Southern Piedmont of North Carolina

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" AVOIDING WHEAT AND BARLEY HEAD SCAB"

By Christina Cowger (USDA-ARS), Paul Murphy (NCSU), and Randy Weisz (NCSU)

As you get ready to plant small grains, remember the spring 2009 epidemic of Fusarium head blight, or "scab." Let's head off trouble with scab in 2010!

Choose resistant varieties

Many wheat varieties that yield well in North Carolina have fair or good resistance to head scab. See the list on page 3 here: http://www.smallgrains.ncsu.edu/SmartGrains/No22VarietySelection2009.pdf

There is no need to gamble on the weather next spring by relying on varieties rated "S" for "susceptible" to scab. Choose at least two varieties rated "MR" for "moderately resistant." Rain will determine whether scab is severe, and resistant varieties will greatly reduce your risk.

What about scab-resistant barley varieties? Of the hulled barleys released by Virginia Tech, 'Thoroughbred' has the best scab resistance. In the hulless category, it's the varieties 'Eve' and 'Dan.'

Stagger planting dates

The severity of scab depends greatly on when your wheat flowers in relation to rainy spells in the spring. If you choose multiple varieties (with different "heading dates"), and plant on different dates, you will spread out the flowering period and minimize your risk.

Should I plant back scabby seed?

It is not advisable to plant back seed from fields that had moderate or severe scab. The main reason is that seeds infected by the Fusarium fungus will have low germination and poor vigor. Additionally, those that do germinate and emerge may still be killed by the fungus. The result is a thin stand.

The more scab you had last spring, the more you need to buy certified seed. Your seed should have a test weight of at least 58 lb/bushel and a germination rate of at least 90%. If seed from mildly to moderately scabby fields is planted back, it should be cleaned thoroughly and treated with Dividend or Raxil. However, seed treatment will only give you a 5% boost in germination and a 2-3 bu/acre boost in yield, on average. This boost will not be sufficient for scabby seed with low test weight and poor germination.

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" AVOIDING WHEAT AND BARLEY HEAD SCAB"

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(Another issue about planting back saved seed involves variety patents. Some wheat varieties carry a utility patent that makes saving the seed illegal. If seed is saved for plant back, make sure that it is not patented!)

Scab field trials

Small-grains researchers are carrying out field experiments that will help North Carolina growers avoid and manage scab. We'll put seven commonly grown wheat cultivars under attack by scab, and compare the effectiveness of the fungicides Proline and Caramba, applied at flowering. (By the way, that's the only fungicide timing that controls scab. More common wheat fungicides like propiconazole [e.g., Tilt] are ineffective, and strobilurins such as Quadris and Headline should not be used for scab.) We're planting the trials in Salisbury, Union Co., Whiteville, Beaufort Co., and Plymouth. The Salisbury trial will include two barley varieties. Stay tuned – we will get more information about applying fungicides for scab management in the mail to you, and we'll invite you to view the field trials next spring!

In addition, as we have done for the past five years, we will evaluate the varieties in the NC Official Variety Trial in a special misted / inoculated nursery at Kinston. The hardware for this nursery was provided with funding from NCSGGA and permits us to update the resistance level in current commercial varieties on an annual basis.

Next spring; check your scab risk here: www.wheatscab.psu.edu.

HOW MANY CORN SEED PER ACRE DO I PLANT?

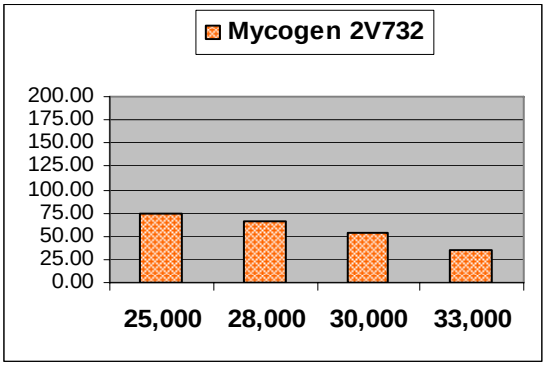
Many if not all of us have asked ourselves this very question over the past few years when making planting decisions in the Spring. Too few or too many seeds prevent us from reaching the maximum yield potential. Many of the new hybrids are equipped to do more with less and therefore are recommended to be planted at higher populations. However, this is not the case for every hybrid and leaves us to question how many seeds are enough and how many are too many? Of course there are many factors that need to be considered when making this decision such as soil fertility, drainage, past yield history, and weather. This year in coordination with the Tri-County Corn Variety trial we attempted to provide some insight into the answer. We asked each seed company that was including any varieties in the yield contest, if interested, to send another bag of seed that could be included in the population study. We then planted each variety at 25,000; 28,000; 30,000 and 33,000 seeds per acre. Stand counts were taken to get actual plants per acre (Figure 1). The planted population is presented in the top line of the chart in bold numbers while with the actual populations are below. The yield data is also included below in the following bar graphs.

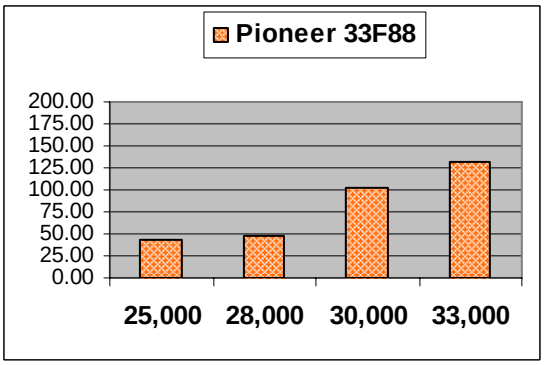
(Figure 1)

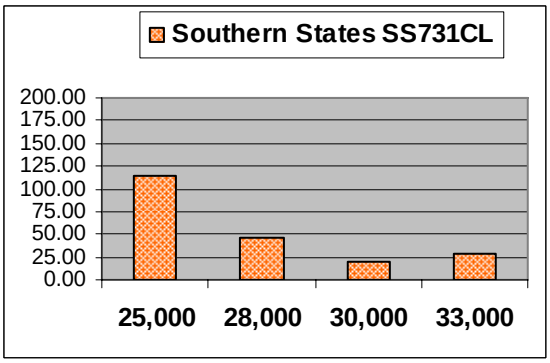
Brand	Variety	25,000	28,000	30,000	33,000
Mycogen	2V732	24,045	25,787	28,226	32,757
Pioneer	33F88	25,439	26,833	28,575	30,666
SS	731 CL	24,742	26,136	27,529	30,666
Dekalb	DKC68-06	23,348	26,484	27,787	32,060
Seed Consultants	SC11RR58	24,045	25,439	27,529	31,363
Trisler	7A14VT3	24,393	28,226	30,317	32,060

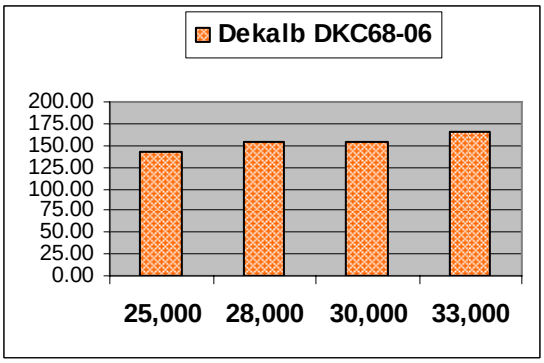
HOW MANY CORN SEED PER ACRE DO I PLANT?

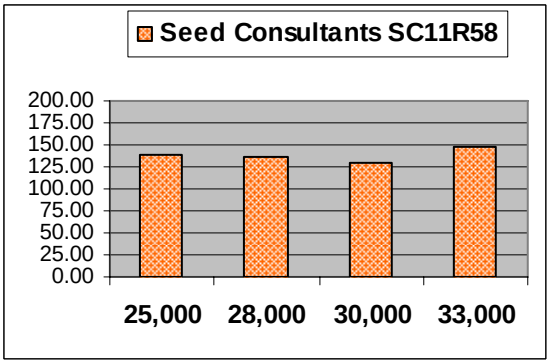
Continued

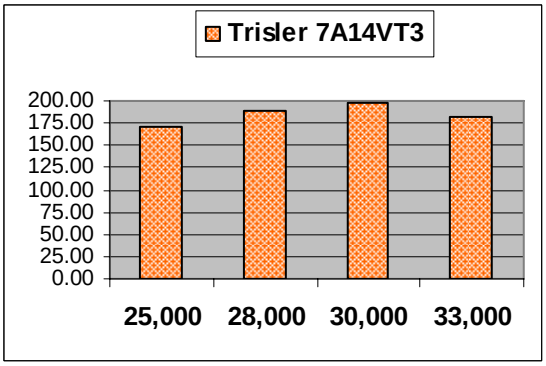












Unfortunately, no clear answer came out of this trial other than the fact that some yields increased, others changed very little, and some decreased with an increase in plant population. This was an extreme weather year and please keep that in mind when viewing this data. The take home message is to know your variety and ask your salesman for information on your selection and planting populations before planting. We hope to be able to repeat this trial in upcoming years to attempt to provide a more concrete answer.

Here's An Opportunity to Upgrade Your Equipment While We Clean the Air! Over $1 Million in Grants Available

As a part of the American Recovery and Reinvestment Act, over $1 million in funding has been made available to GRADE+. Over 10,000 public and privately owned equipment and engines (Non-Road Heavy Duty Diesel and Stationary Diesel Equipment in the 13-county, bi-state region of North and South Carolina are eligible to participate in this grant opportunity. The following NC counties are included in the region Iredell; Rowan; Cabarrus; Stanly; Anson; Union; Mecklenburg; Gaston; Lincoln; and Cleveland. The following SC counties are also included: York; Lancaster and Chester.

GRADE+ grants now available make for an excellent opportunity for you to reduce maintenance costs and extend the life of your equipment while breathing easier financially with assistance from Stimulus Funds. By repowering or replacing old, high-emitting diesel engines with new engines, models and technology that are certified by the EPA to meet a more stringent emission standard, we anticipate achieving over 166 tons of nitrogen oxides (NOx) reductions in our bi-state region over the next five years.

Making the GRADE

GRADE (Grants to Replace Aging Diesel Engines) was first launched in 2007 in a seven-county region to provide incentive funding to organizations that replaced or repowered Heavy Duty Non-/road Construction Equipment. Mecklenburg County Air Quality (MCAQ), a local air quality agency whose goal is to improve ambient air quality in the region and reduce exposure to unhealthy airborne pollutants, strives to maintain progress toward attainment of National Ambient Air Quality Standards by limiting and reducing emissions. Based on the success of GRADE and the programs that followed, MCAQ recently received $1,100,000 in funding from the American Recovery and Reinvestment Act to expand the program. GRADE+ now includes 123 counties in North Carolina and South Carolina and has been expanded to include Construction, Agricultural, Industrial and Commercial sectors operating Non-Road Diesel, On-Road Heavy Duty Diesel and Stationary Diesel Equipment.

Interested in GRADE+ Grants?

If you own or your company owns Non-Road Diesel, On-Road Duty Diesel or Stationary Diesel Equipment in the 13-county, bi-state region, this is your opportunity to take advantage of GRADE+ funds to repower or replace your equipment.

TO APPLY FOR A GRADE+ GRANT, simply review eligibility and preliminary requirements, and complete your application.

Don't Delay—Applications Accepted September 1, 2009—October 31, 2009.

GRADE PLUS PROGRAM:

The following are the program highlights:

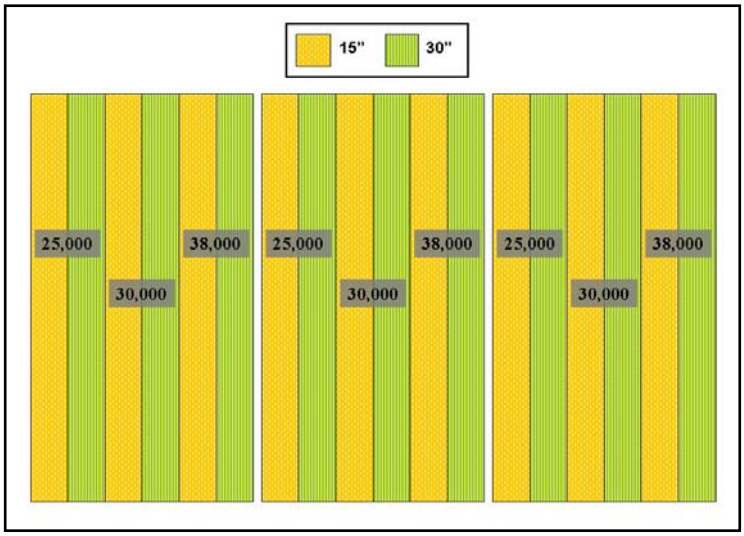
- **Union, Stanly and Anson** Counties and their jurisdictions qualify for program.
- **Local Businesses qualify** for the program
- **Class 2B trucks (or high) and farm equipment (greater than 25 horsepower) qualify for this program.**
- Reimbursements will be provided through a competitive grant process. The call for applications will begin on **September 1st and close on October 31st**. Applicants will be notified within thirty days of the close date.
- GRADE PLUS is a reimbursement program that provides money to replace engines and vehicles, thus reducing air pollution.
- The program has about $900,000 to give out. No one applicant can receive more than $150,000.
- Governments and businesses can apply for the program.
- Engine replacement will be reimbursed at **75%** and vehicle replacement will be reimbursed at **25%**. Applicants can purchase used engines/vehicles as long as those engines/vehicles are "cleaner" than the old equipment.
- All equipment must be used 75% of its time in the MSA.
- Applicants need to apply and be approved before purchasing any equipment.

For more information, please contact Eric Moore at eric.moore@mecklenburgcountync.gov or by phone at 704-336-5430. Eric is currently working on a website, www.gradeplus.net, that will have all the details on the program and application.

ROW SPACING BY POPULATION
15" vs. 30" Row Spacing

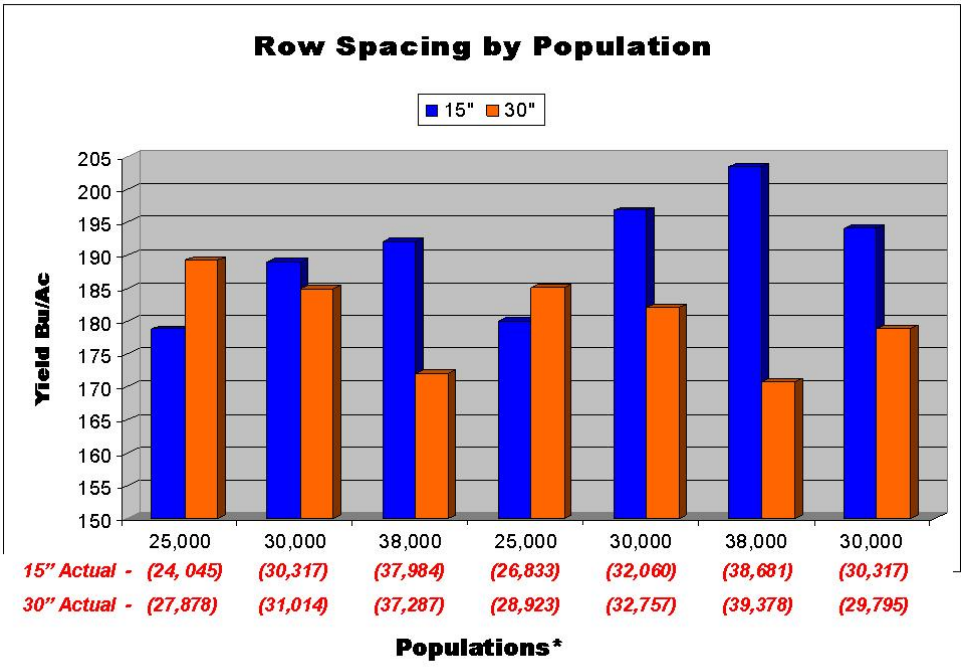
Across many regions of the state we have seen a trend toward narrower corn rows. Row spacing has changed from the width of a mule's back-side to as low as 15 inches over the past few decades. However, very little research has been conducted in North Carolina to determine the fit of this narrow row corn in our production systems.

This spring a trial was initiated in Marshville, NC to evaluate a side by side comparison of 15" corn and 30" corn at 3 planting populations. On 27 April, 2009 the trial was planted with Augusta AG7463LL corn. The selected populations were 25,000, 30,000 and 38,000 seeds per acre. The trial arrangement is illustrated below.



This arrangement was selected to avoid any bias. Each row width was planted side by side with the selected population to ensure consistency. The spacings by populations were replicated 3 times, however due to circumstances, the only population able to be harvested in the 3rd replication was the 30,000. Therefore, the remaining treatments were only replicated twice. Yield data is included below. The projected population is listed below each treatment while the actual stand count for each row spacing is listed in parentheses.

When populations were approximately 25,000 seeds per acre, 30 inch row spacing yields averaged approximately 7 bushels more than the same population in 15 inch spacing. However, when populations were increased to approximately 30,000 and 38,000 seeds per acre, yields averaged approximately 11 and 26 bushels more respectively, with the 15" row spacing. This yield difference is likely best explained by within row spacing. When 30,000 seeds per acre are planted on 15" row spacing they are nearly 15 inches apart within the row, while the same population in 30" spacing, plants are only 7" apart. It is also important to note the 25,000 plant population in 30" rows is actually an average of 28,400 plants per acre. This could provide some explanation to why the yield was greater with this spacing at this particular population.



* numbers in parentheses are actual stand counts taken the morning before harvest

While reviewing this data it is important to note this is only data from one year and in one location with one variety. Multiple locations over multiple years with multiple varieties are needed before concrete conclusions can be made. There are also many things to consider such as equipment cost, possibly increased seed cost and various other items to take into account with a change to narrow row spacing and it is critical that they are all considered.

TRI-COUNTY VARIETY TRIAL 2009

Brand	Variety	Herb. Trait*	Insect Trait	Seed Tmt.	R. M.	Test Wt.	Yield bu/ac
Seed Consultants	SCS 11Q39	RR2 & LL	Herculex Extra	Cruiser Ext 250	113 Day	58.0	98.19
Dekalb	DKC67-87	RR2	Yield Guard CB	Poncho 1250	117 Day	58.0	94.77
Trisler	7A14VT3	RR2	VT3	Poncho 250	111 Day	58.5	94.37
Pioneer	33F87	RR2 & LL	Herculex I	Poncho 1250	114 Day	57.5	94.26
Mycogen	2T780	LL	Herculex	None	114 Day	56.5	92.93
Trisler	8A08VT3	RR2	VT3	Poncho 250	113 Day	59.0	91.14
Mycogen	2T832	RR2	VT3	None	115 Day	57.5	87.99
Dekalb	DKC68-06	RR2	Yield Guard CB	Poncho 1250	118 Day	57.5	87.18
Pioneer	34F96	RR2 & LL	Herculex I	Poncho 1250	111 Day	58.0	82.58
Pioneer	31G71	RR2 & LL	Herculex I	Poncho 1250	119 Day	58.5	82.47
DynaGro	58P59	RR2	Trilex/ApronXL/Maxim	Poncho 250	116 Day	56.0	78.71
Southern States	684VT3Pro	RR2	VT3	Poncho 250	111 Day	59.0	78.2
Mycogen	2T826	RR2 & LL	Herculex	None	115 Day	58.0	68.49
Seed Consultants	SC11VT48	RR2	Yield Guard VT3	Cruiser Ext 250	114 Day	57.5	61.71
Dekalb	DKC67-23	RR2	Yield Guard CB	Poncho 1250	117 Day	58.0	54.55
Trisler	9J38VT3	RR2	VT3	Poncho 250	116 Day	60.0	52.43
Southern States	749VT3Pro	RR2	VT3	Poncho 250	115 Day	56.0	49.66
Seed Consultants	SC11VT45	RR2	Yield Guard VT3	Cruiser Ext 250	114 Day	56.5	48.88
DynaGro	57P12	RR2	Trilex/ApronXL/Maxim	Poncho 250	115 Day	57.0	48.6
Southern States	818RR2	RR2	None	Poncho 250	118 Day	56.0	47.89

Cooperator: **Kevin D. Baucom**

*** RR2 = Roundup Ready 2 *LL = Liberty Link**

Plot average: 74.75

Location: **New Salem**

Planting Date: **22 May, 2009**

Fertilizer History: **Chicken Litter @ 3 ton/ac Pre Plant; 137 lbs 46-0-0 in 2x2 placement at planting**

Herbicide Program: **3 Qts Lexar + 1.5 pts Gramaxone with 20 Gallons 30% UAN at planting**

1 Qt Glyphosate + 1 Qt Atrazine Post-emergence over top

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