Beaufort County Cooperative Extension

2008 Wheat On-Farm-Test Report

Foxfire Farms

Gaylon Ambrose
Agricultural Extension Agent

NC STATE UNIVERSITY

Beaufort County Center
155-A Airport Road
Washington, N.C. 27808
252/946-0111
252/946-5887 fax

To: Beaufort County Wheat Producers and Agribusinessmen

From: Gaylon Ambrose
Extension Agent
Agriculture

Date: July 24, 2008

The 2008 Beaufort County Wheat On-Farm-Test Report was made available because of the donations of land, materials and resources of many individuals, companies and organizations. I especially want to thank Larry and Sandra Boyd of Foxfire Farms for their cooperation with the on-farm-tests and being an excellent host for our Wheat Field Day. In addition, the Beaufort County wheat on-farm-testing program would not be possible without the cooperation and support of Paul Murphy, Ron Heinger, Randy Weisz, Daryl Bowman, Alan Meijer, Christina Cowger, Barry Tarleton, Phil Johnson and Dwight Parrish of N.C. State University and the support of N.C. Small Grain Growers Association.

I hope that the information included in this book will be a benefit in helping producers making management decisions. Thank you again for your support of the Cooperative Extension Service in Beaufort County.

North Carolina State University and North Carolina A&T State University commit themselves to positive action to secure equal opportunity regardless of race, color, creed, national origin, religion, sex, age, or disability. In addition, the two Universities welcome all persons without regard to sexual orientation. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.

Table of Contents

Subject	Page
Beaufort County Wheat Variety Performance	1
Beaufort County Oat Variety Performance	5
Wheat Variety Seed Treatment Tests	6
Foliar Fungicide Tests	8
Wheat Tillage Options	12
Herbicide Control of Hairy Vetch	14
Wheat Seeding Rate Tests	15
Composted Layer Manure as a Fertilizer Source	16
Hessian Fly Control Test	17

Wheat Variety Tests

In 2007-08 forty-three varieties were evaluated for powdery mildew and leaf rust resistance, lodging resistance, and yield. The variety test was conducted on Foxfire Farms in Pinetown, N.C. The soil type was a Lenior loam and the prior crop was tobacco. The variety test utilized a randomized complete block design with four replications. The plots size was seven feet wide and forty feet long. The plot was planted November 8 and harvest June 13. Table 1 provides the wheat yield performances for one, two and three years in Beaufort County. The top ten yielding varieties this year included Vigoro McIntosh, SS 520, SS 548, USG 3592, Vigoro Oglethorpe, Vigoro 9723, SS 8404, SS 8641, USG 3209, SS 8302 and NC Neuse. Over the last three years the above average yielder included SS 8404, SS 8302, USG 3592, Vigoro McIntosh, NC-Neuse, Vigoro Dominion, Panola, Pioneer 26R31, Vigoro 9510, Coker 9312, Pioneer 26R 15, Pioneer 26R 12, Coker 9553, and SS 8308. Powdery mildew ratings are also included for this year.

There are four rules to keep in mind when choosing a wheat variety. First, has the variety been evaluated in the Official Variety Test and/or in a nearby county trial over the last two years. Second, select a variety that produces a yield above the average of the varieties tested. Third, does the variety offer a pest resistance to the most limiting pest in your region? Fourth, when planting early, select a variety with a late heading date. Wheat variety characteristics and disease resistance ratings are presented on pages 3 and 4.

Producers should plant at least three varieties, to avoid freeze damage no more than one of those should be early or med-early heading. Late heading varieties do well if they are the first ones planted, early heading varieties should be planted last.

Varieties should also be selected to minimize insect and disease problems. For example, powdery mildew can hurt wheat in the Coastal Plains. Soil virus diseases (Soilborne Wheat Mosaic & Wheat Spindle Streak) have also been yield robbers in recent years. Growing high yielding varieties that are rated resistant (R), or moderately resistant (MR) to these diseases can help. If there is a specific disease that has historically been problematic on a farm, varieties can be selected that have resistance to it.

Table 1. Wheat Performance in Beaufort County Based on One- Two- and Three-Year Test Data.

	Three Year 2006-08		Two Year 2007-2008		One Year 2008			
Variety	Grain Yield bu / ac	*Grain Yield Rank*	Grain Yield bu / ac	*Grain Yield Rank*	Grain Yield bu / ac	*Grain Yield Rank*	Test Weight lb / bu	Powdery Mildew %
SS 8404	81	*1*	79	*3*	68	*7*	60.5	2
SS 8302	80	*2*	77	*4*	65	*10*	60.8	9
USG 3592	79	*3*	80	*2*	70	*4*	60.4	8
Vigoro McIntosh	78	*4*	82	*1*	75	*1*	61.2	1
NC-Neuse	78	*4*	75	*9*	65	*10*	62.4	0
Vigoro Dominion	78	*4*	77	*4*	62	*15*	60.4	0
Panola	78	*4*	75	*9*	59	*24*	58.8	5
Pioneer 26R31	77	*8*	74	*13*	62	*15*	58.0	0
Vigoro 9510	77	*8*	77	*4*	60	*22*	60.6	3
Coker 9312	76	*10*	75	*9*	63	*12*	61.0	11
Pioneer 26R15	76	*10*	74	*13*	61	*18*	60.0	1
Pioneer 26R12	76	*10*	74	*13*	54	*37*	60.2	1
Coker 9553	75	*13*	77	*4*	59	*24*	61.2	1
SS 8308	75	*13*	70	*22*	53	*39*	61.1	1
SS 535	74	*15*	73	*16*	59	*24*	61.5	2
Roane	74	*15*	73	*16*	58	*30*	62.0	8
Coker 9436	74	*15*	71	*20*	58	*30*	59.4	2
SS 520	73	*18*	76	*8*	71	*2*	59.3	2
Vigoro Tribute	73	*18*	70	*22*	57	*34*	63.9	1
SS MPV 57	72	*20*	73	*16*	61	*18*	60.9	2
Coker 9663	72	*20*	71	*20*	57	*34*	60.1	13
Coker 9511	71	*22*	70	*22*	60	*22*	62.1	4
Coker 9184	71	*22*	69	*25*	58	*30*	62.3	2
Pioneer 26R24	70	*24*	68	*26*	49	*40*	57.7	2
McCormick	67	*25*	66	*27*	59	*24*	63.1	0
Pioneer 26R61	66	*26*	60	*28*	54	*37*	58.9	1
SS 548					71	*2*	60.2	7
Vigoro Oglethorpe					70	*4*	59.4	1
Vigoro 9723					70	*4*	59.0	2
SS 8641					68	*7*	62.1	1
USG 3209					66	*9*	59.3	1
Coker 9700					63	*12*	59.5	1
SS 560			75	*9*	63	*12*	59.9	2
Progeny P185					62	*15*	59.8	11
Vigoro 9412					61	*18*	59.2	2
Coker 9804					61	*18*	59.3	2
Magnolia			72	*19*	59	*24*	58.7	24
SS 8309					59	*24*	58.1	1
Branson					58	*30*	60.8	0
Vigoro 9713					55	*36*	60.1	9
Coker W1377					47	*41*	61.0	38
Progeny P166					43	*42*	59.2	28
CV	7.2		7.3		11.3		1.3	97.6
Average	75		73		61		60.3	5
LSD	11		11		14		1.6	10

Wheat Variety Characteristics

Variety	Heading Date	Powdery Mildew	Leaf Rust	Hessian Fly Type-L	Barley Yellow Dwarf	Soilborne Wheat Mosaic	Wheat Spindle Streak	Head Scab	Stripe Rust
AgriPro Coker 9184	Late	MS	MS	Poor	F/P	MR	R	MS	MS
AgriPro Coker 9295	Med	MS	MR	Poor	Poor	MR	MR	S	MR
AgriPro Coker 9312	Med	S	MR	Good	-	R	R	MR	MS
AgriPro Coker 9436	Late	MR	-	-	-	MR	-	-	-
AgriPro Coker 9511	-	-	-	-	-	-	-	-	-
AgriPro Coker 9553	-	-	-		-	-	-	-	-
AgriPro Coker 9663	Early	S	MR	Poor	Good	S	MS	MS	MR
AgriPro Cooper	Late	S	MS	-	-	R	R	-	-
AgriPro Crawford	Early	MR	R	Fair	Fair	MR	MR	MS	MR
AgriPro Panola	Med	MR	MS	-	-	MR	MS	-	-
NC Neuse	Late	R	MR	Good	F/P	R	MS	MR	MS
Roane	Late	S	S	Good	Good	MS	R	MR	MS
McCormick	Med	R	MR	Fair	-	MR	R	MR	MS
Pioneer 26R12	Med	MR	MR	Good	F/P	MR	R	MS	MS
Pioneer 26R15	Med	MR	MR	Good	-	MR	R	MR	MR
Pioneer 26R24	Med	S	MS	F/P	F/P	MR	MR	S	S
Pioneer 26R31	Early	R	-	-	-	MR	-	-	-
Pioneer 26R38	Early	MS	MS	Good	-	MR	MS	-	-
Pioneer 26R58	Med	MS	MR	Poor	-	MR	R	-	-
Pioneer 26R61	Med	MS	MR	Good	F/P	MR	R	S	MR
SS 520	Early	MR	MS	Poor	Good	MR	R	MS	S
SS 535	Late	MR	S	F/P	Fair	-	R	S	MS
SS 550	Med	MS	S	Poor	G/F	MS	R	MS	S
SS 566	Late	R	MS	F/P	F/P	-	MR	MS	MS
SS 8302	Med	S	MS	Fair	-	MR	-	MR	R
SS 8308	Med	R	MS	-	-	R	-	-	-
SS 8309	Late	MR	MS	Poor	-	S	-	MR	S
SS 8404	-	-	-	-	-	-	-	-	-
SS 38306	-	-	-	-	-	-	-	-	-
SS MPV 57	Late	MS	MS	-	-	R	-	-	-
Vigoro 9412	-	-	-	-	-	-	-	-	-
Vigoro 9510	-	-	-	-	-	-	-	-	-
Vigoro Dominion	-	-	-	-	-	-	-	-	-
Vigoro McIntosh	-	-	-	-	-	MR	-	-	-
Vigoro Tribute	Med	R	MS	G/F	G/F	S	MR	MR	MS
USG 3209	Med	MR	S	Fair	Fair	R	R	MS	MR
USG 3592	Med	MS	MR	Poor	-	MR	R	S	MS
USG 3706	-	-	-	-	-	-	-	-	-

S, MS, MR, and R stand for Susceptible, Moderately Susceptible, Moderately Resistant, and Resistant, respectively.

Based on all available information. Contributors include Drs. C. Cowger (USDA-ARS); P. Murphy and R. Weisz (NCSU)

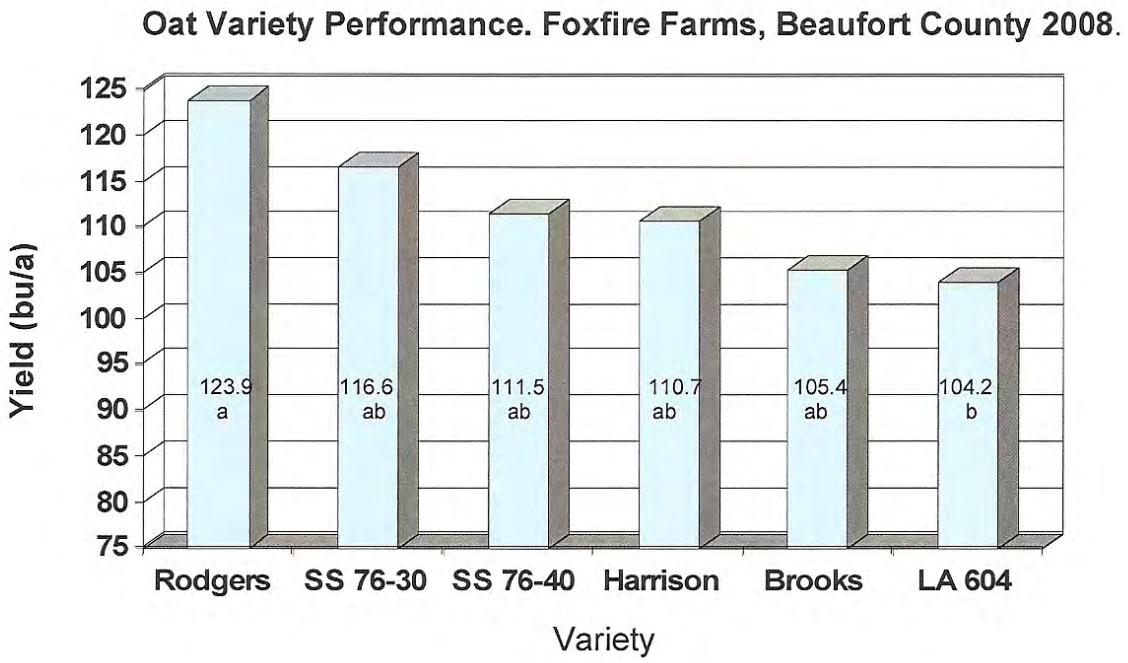
Beaufort wheat OVT
13-May-08

	Fusarium head blight ratings			
	Incidence (%, mean of 3 reps)	Severity (%, mean of 3 reps)	Index (incid x sever / 100)	Variety rating
Progeny 127	0.2	11.7	0.0	MR
SS 8309	0.2	17.7	0.0	MR
Roane	0.3	20.0	0.1	MR
Coker 9436	0.6	13.3	0.1	MR
Progeny 122	0.5	17.7	0.1	MR
NC Neuse	0.3	31.0	0.1	MR
Vigoro V9713	0.8	15.0	0.1	MR
Jamestown	1.2	15.7	0.2	MR
Vigoro Dominion	2.3	10.7	0.2	MR
Progeny 117	1.3	21.7	0.3	MR
Progeny 166	0.8	50.0	0.5	MR
SS 8302	3.0	25.0	0.7	MR
AGS 2050	3.0	28.3	0.9	MR
Pioneer 26R15	2.7	30.0	1.0	MR
USG 3725	2.3	50.0	1.2	MR
USG 3665	2.7	48.3	1.6	MR
Progeny 145	3.0	70.0	1.9	MR
USG 3555	7.0	26.7	2.0	MR
Progeny 185	4.3	56.7	2.5	MS
USG 3342	4.7	53.3	2.5	MS
AGS 2031	7.0	37.7	2.8	MS
USG 3209	7.0	35.0	2.9	MS
Pioneer 26R31	6.7	43.3	3.1	MS
Coker 9700	8.0	50.0	4.0	MS
Coker 9553	8.7	46.7	4.3	MS
SS 520	9.0	48.3	4.3	MS
SS MPV 57	15.7	43.3	7.5	MS
SS 560	12.7	58.3	7.5	MS
SS 8404	17.3	55.0	9.6	S
Pioneer 26R22	16.3	55.0	9.6	S
SS 548	15.7	68.3	10.6	S
USG 3592	21.7	50.0	10.8	S
Panola	21.7	58.3	12.8	S
Pioneer 26R12	19.3	66.7	13.0	S
Pioneer 26R24	19.7	68.3	13.4	S
Magnolia	21.0	73.3	15.4	S
SS 8308	25.0	61.7	15.8	S
Coker 9184	23.3	68.3	16.3	S
SS 8641	23.3	73.3	17.1	S
Mean	9.3	44.1	5.2	
CV	35.8	30.0	48.4	
LSD	7.3	22.0	5.7	

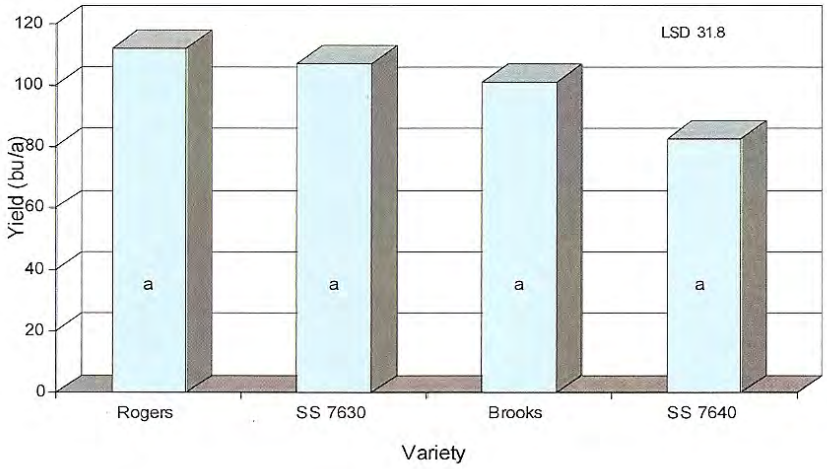
courtesy of Dr. Christina Cowger, NCSU.

Oat Variety Performance Tests

Rodgers and SS 76-30 were the highest yielding oat variety tested over the last two seasons.



Oat variety yield performance, 3 B Farms, Beaufort County 2007.

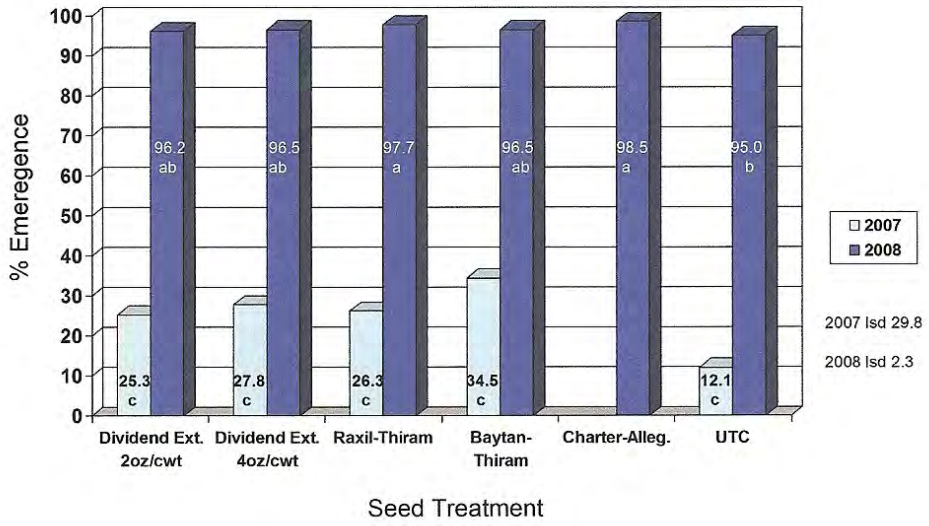


Wheat Seed Treatments

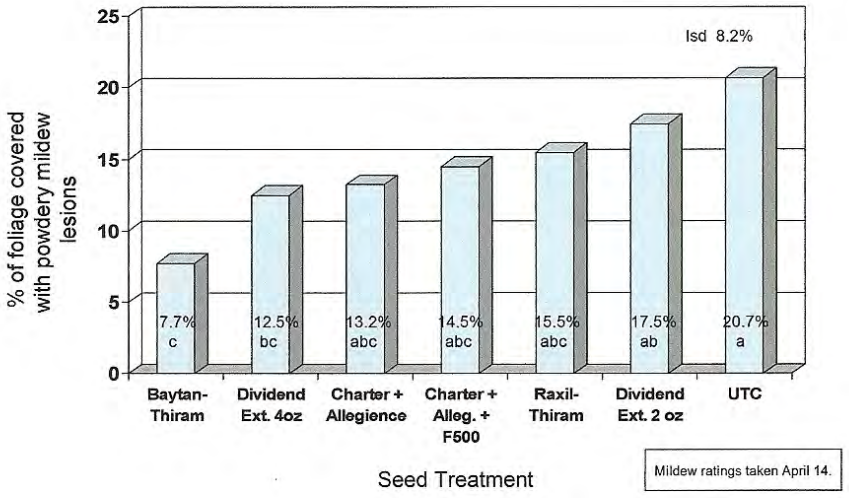
Seed treatments can be divided into two general categories: standard fungicidal seed treatments, and specialty seed treatments. Standard seed treatments are inexpensive, +/- $1.50 per 50 pounds of seed, and are effective against a broad spectrum of problems including seed decay, seedling diseases that reduce plant stand, and loose smut. These treatments may also be highly effective against problems that are most likely to occur in cold wet soils, and that are also more problematic in no-till. Specialty seed treatments, which cost +/- $3.50 or more per 50 pounds of seed, include fungicides or insecticides that are targeted at specific pest problems, such as powdery mildew, Hessian fly, or barley yellow dwarf virus.

Standard and specialty wheat seed treated were evaluation for stand and powdery mildew control in 2007-08 on Foxfire Farms and for crop stand on 3B Farms in 2006-07. In general, in both years all seed treatments improved plant stand when compared to the untreated control (UTC) (see page 7). Specialty seed treatments, Baytan-Thiram and Dividend Extreme @ 4 oz/cwt, reduced the severity of powdery mildew on a Coker 9663, a susceptible variety. Standard fungicidal seed treatments did not significantly reduce the severity of powdery mildew. In the last two years, seed treatments made no significant impact in improving wheat yields in the plots on 3B Farms and Foxfire Farms.

Impact of seed treatments on wheat emergence, 3B Farms 2007, Foxfire Farms 2008, Beaufort County.



Impact of fungicide seed treatment on powdery mildew infestation on a susceptible wheat variety (Coker 9663), Foxfire Farms, Beaufort County 2008.



Foliar Fungicide Tests

In 2005-08 four on-farm-tests were conducted to demonstrate and evaluate five foliar fungicides for the control of powdery mildew and leaf rust. The varieties Coker 9663 and USG 3209 were used in 2005. Coker 9663 and McCormick were used in 2006-08. The foliar fungicides included Headline (8 oz/a), Quadris (8 oz/a), Stratego (10 oz/a), Tilt (4 oz/a), Quadris (10 oz/a) and Quilt (14 oz/a). Coker 9663 is susceptible to powdery mildew and USG 3209 and McCormick are susceptible to leaf rust.

All fungicide treatments reduced the incidence and development of powdery mildew on Coker 9663 in 2005 and in 2008(Graphs 3 & 6). Quadris, Headline, Quilt and Stratego significantly increase wheat yield in 2005 (Graph 4) and Headline, Stratego and Quadris increased yield in Coker 9663 in 2008 (Graph 7).

The disease severity was significantly less in the 2006 test. There was not a significant increase in wheat yield with the use of fungicides in 2006, however there was a trend toward increased yields with fungicide use (Graph 5).

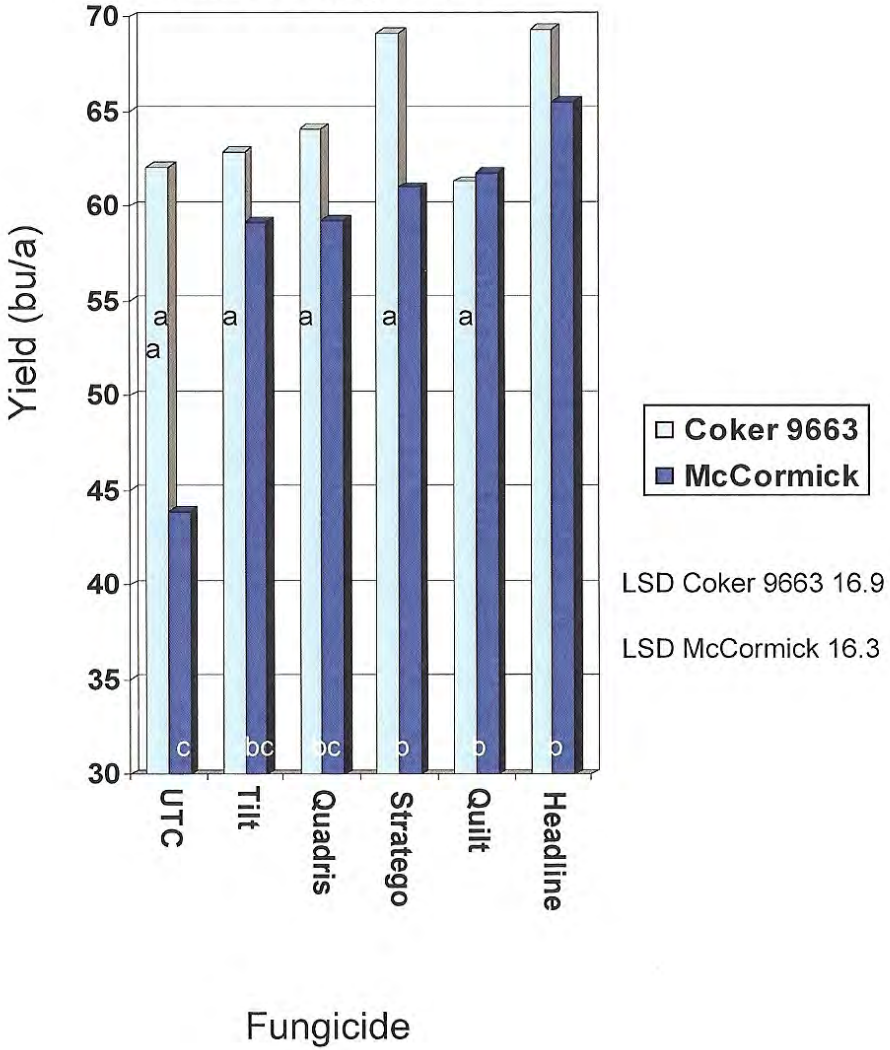
In 2007 the powdery mildew severity was too low to rate in either variety. There was a significant development of leaf rust on McCormick (Graph 2). All fungicides reduced the severity of leaf rust on McCormick and Headline, Quilt and Stratego significantly increased wheat yields (Graph 1). Coker 9663 did not develop a significant infestation of powdery mildew or leaf rust and the use of the foliar fungicides did not increase the yield.

In 2008 there was an above threshold infestation of powdery mildew on Coker 9663. All fungicide treatments reduced the severity of powdery mildew on Coker 9663 and there was a trend for higher yields with all fungicide treatments with Quadris, Stratego and Headline providing a significant increase in wheat yield (Graphs 6 & 7). The McCormick remained below the threshold for treatment for powdery mildew and leaf rust and fungicide treatment did not provide a significant increase in wheat yield (Graph 8).

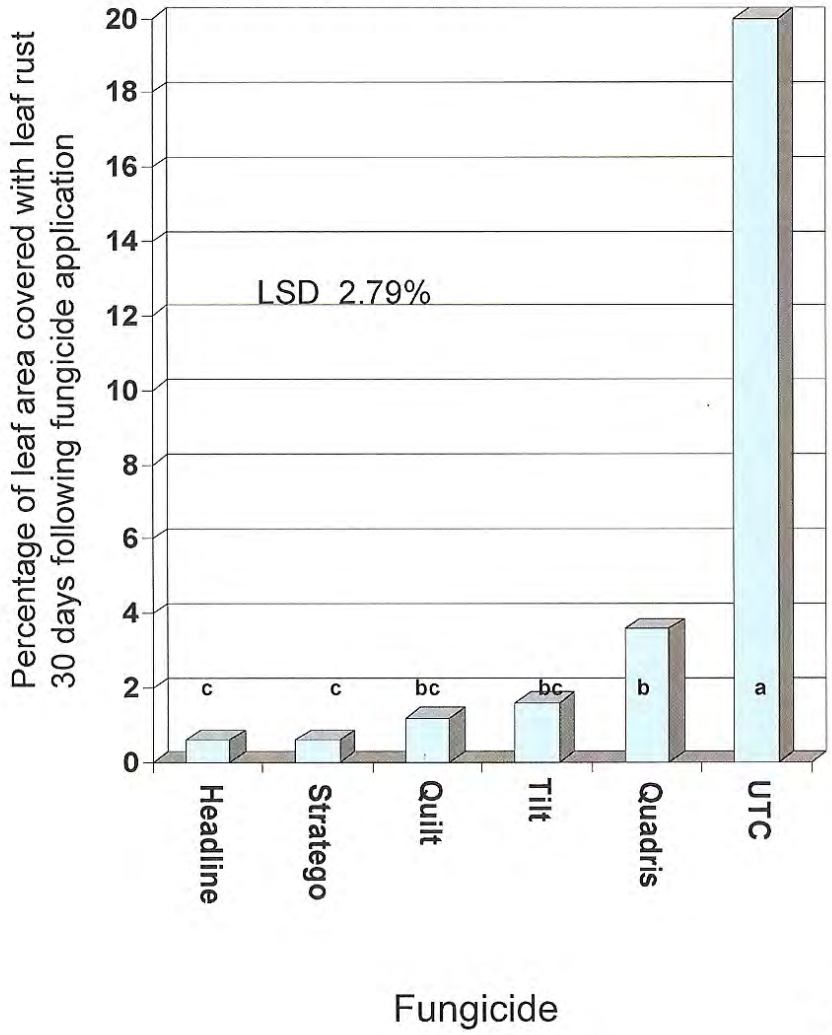
Efficacy rating of fungicides for wheat disease control on appropriate application timing by Dr. Eric Stromberg of VPI is reported on page 11.

Impact of foliar fungicides on leaf rust and wheat yield, 3B Farms, Beaufort County 2007.

Graph 1. Impact of fungicides on wheat yields, 3B Farms, Beaufort County 2007.

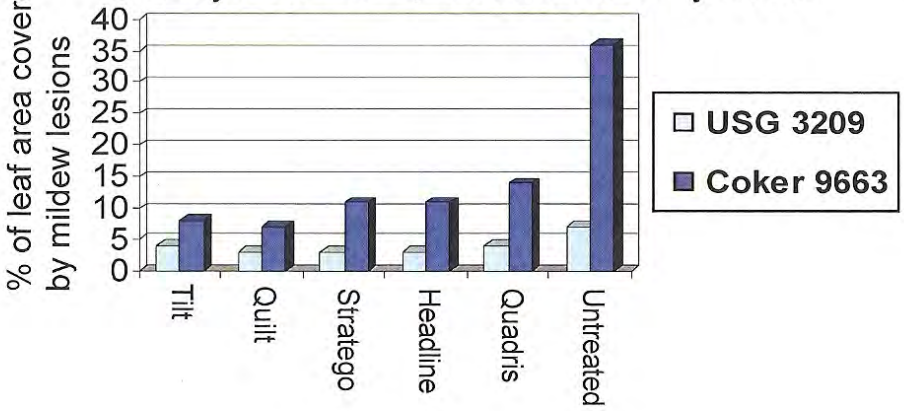


Graph 2. Impact of fungicides on leaf rust development on McCormick, 3B Farms, Beaufort County 2007.

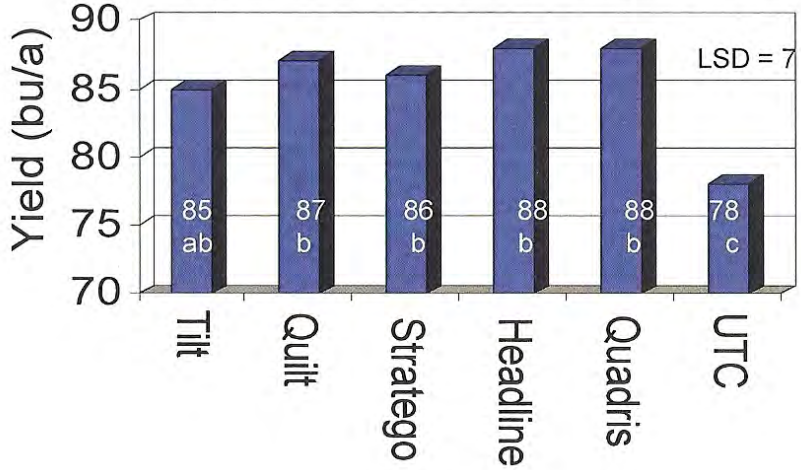


Impact of foliar fungicides on powdery mildew and wheat yield, Mickey Elks Farm 2005 and Haslin Farms 2006, Beaufort County.

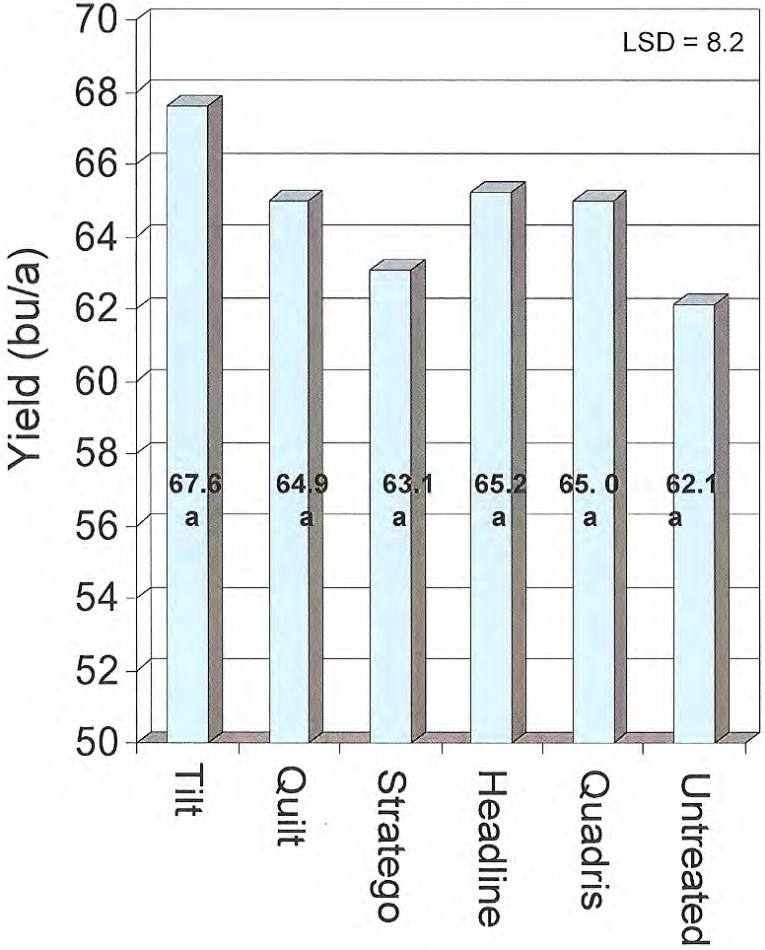
Graph 3. Impact of fungicide on powdery mildew, Mickey Elks Farm, Beaufort County 2005.



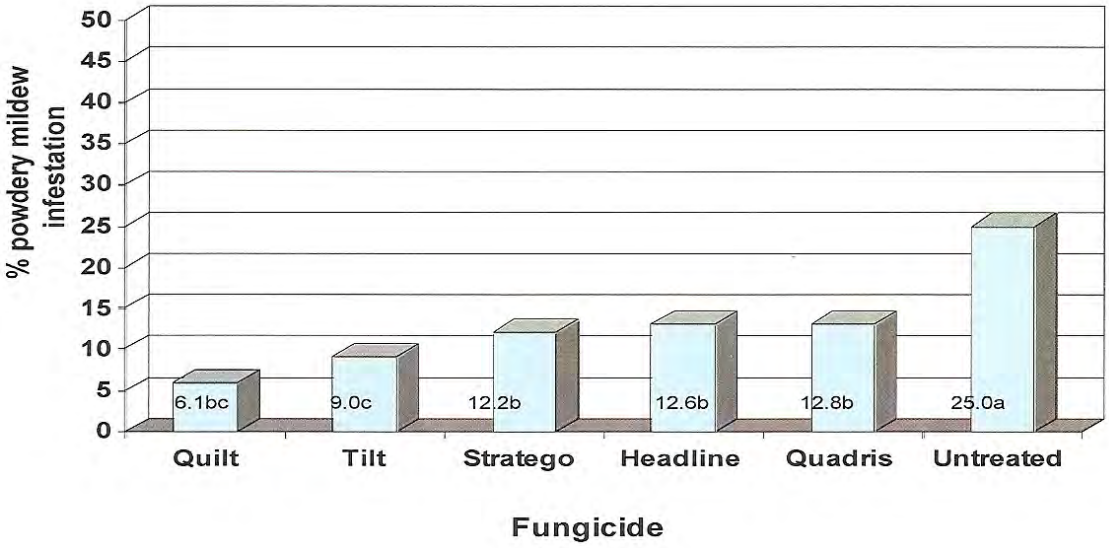
Graph 4 .Fungicide impact on wheat yield, Mickey Elks Farm, Beaufort County 2005.



Graph 5. Fungicide impact on wheat yield, Haslin Farms, Beaufort County 2006.

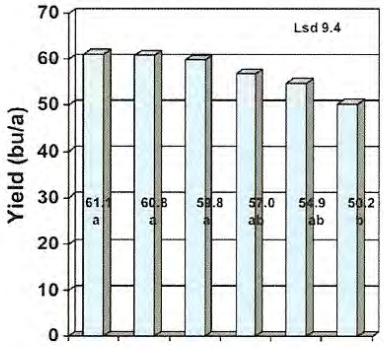


Graph 6. Powdery mildew response to fungicide application on Coker 9663, Foxfire Farms, Beaufort County 2008.

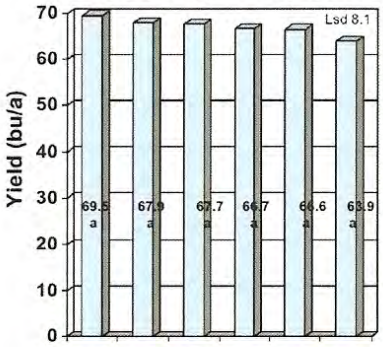


Impact of foliar fungicide treatment on wheat yield, Foxfire Farms, Beaufort County 2008.

Graph 7. Coker 9663 at economic threshold for powdery mildew at treatment



Graph 8. McCormick, fungicides applied in the absence of threshold infestation Levels of powdery mildew or leaf rust.



Efficacy of fungicides for wheat disease control based on appropriate application timing (Courtesy of Dr. Erik Stromberg, VPI)

Product	Fungicide	Rate/A	Powdery Mildew	Stagonospora Leaf/glume blotch	Septoria Leaf Blotch	Leaf Rust	Head Scab
Tilt 3.6 EC	Propiconazole 41.8%	4 oz	+++*	+++	+++	+++	+
Quadris 2.08 SC	Azoxystrobin 22.9%	6.3 to 10.8 oz	=(+)**	+++	+++	++++	
Quilt 200SC	Azoxystrobin 7.0% Propiconazole 11.7%	14 oz	+++	+++	+++	++	
Stratego 250 EC	Propiconazole 11.4% Trifloxystrobin 11.4%	10 oz	++	+++	+++	++	
Headline 2.09 EC	Pyraclostrobin 23.6%	4 oz	++	+++	+++	++++	

Tillage Options for Wheat in Eastern North Carolina.

Alan Meijer – NCSU Soil Science. Plymouth, NC

Introduction

In 2006 and 2007, wheat tillage studies were carried out in Beaufort County. The objective of these studies was to evaluate some relatively new tillage implements that may be of use to growers desiring to grow No-Till (NT) wheat, but having trouble doing so. These implements would be compared to traditional Conventional Tillage (CT) and NT Wheat. *For a more detailed report, see last year's trial report, or contact Alan Meijer at alan_meijer@ncsu or (252) 793-4428 x166.

Materials and Methods

A Phillips rotary harrow (www.kelleymfg.com) and a Great Plains Turbo Till (www.greatplainsmfg.com) were used in this study, alongside traditional CT (disk, field cultivator), and NT (no-till planter) treatments.

The idea behind these two implements is to: 1) Break up and bury some residue; 2) Loosen the soil in the area of the seed/rooting zone; 3) Bring some soil to the surface, with the expectation of warming the soil, and ensuring good seed to soil contact. Basically, the idea is to improve the soil/residue conditions to better enable stand establishment in the fall, especially in cool, wet situations. **Since an actual Turbo Till was not available for use, a Great Plains Coulter Caddy was used in its stead.**In Hyde County in 2007, a DMI subsoiler was used in place of the Turbo Till treatment, due to availability of tools, and grower interest.)*

The two locations for the tests in the fall of '07 were at Foxfire Farms (Larry Boyd) in Pinetown, and with Jeffrey Gibbs in Swan Quarter – Hyde County.

Results

Implement Performance: As in 2006, the rotary harrow did not perform well in the corn stalk residue present at both sites. It had a tendency to "fluff" up the residue, and to

windrow to the outer edges of the implement. Clearly, this is not an acceptable way to handle residue. Also, if following corn that had been planted on beds, the rotary harrow was not able to do much of anything in the bottoms, but move residue from the bed to the bottom. This can create a more uneven plant stand. The coulter caddy (Turbo Till) easily chops through the residue, and when run at ~8mph, actually brings up some soil to the surface, even throwing some in the air. Clearly, it accomplishes more of what it was intended to do than the Rotary Harrow.

Crop Response to Tillage: This year, as with the previous year, most plant growth characteristics (stand, tiller density, yield) were similar among treatments. Figure 1 shows the yield results for this year. Yields were statistically identical amongst all treatments.

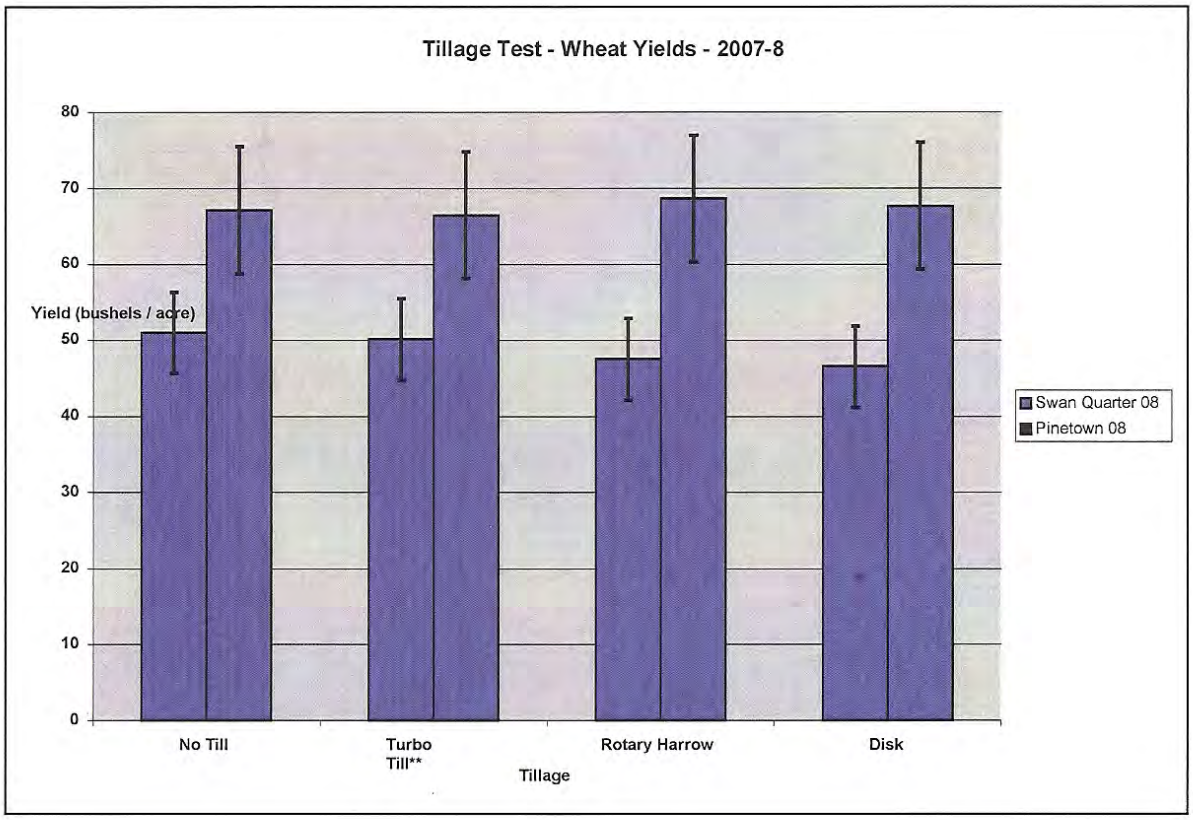


Fig. 1. Yields for tillage treatments at Swan Quarter and Pinetown test locations in 2007-2008. ** A DMI was substituted for the Turbo Till treatment in Swan Quarter.

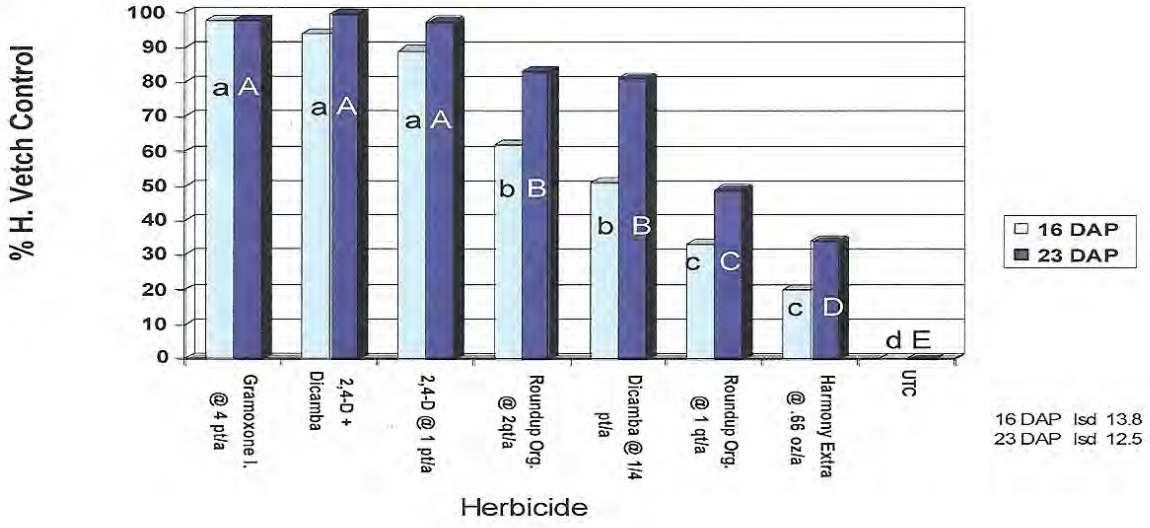
Herbicide Control of Hairy Vetch

Hairy vetch, as a cover crop, has the potential to supply nitrogen to corn and cotton. Hairy vetch as a weed has the potential to have a negative impact on producers of certified wheat seed. Selected herbicides were evaluated for the control of hairy vetch. Non-selective burndown herbicides evaluated included Roundup Original and Gramoxone Inteon. Selective herbicides evaluated included 2,4-D, dicamba, 2,4-D + dicamba, and Harmony Extra.

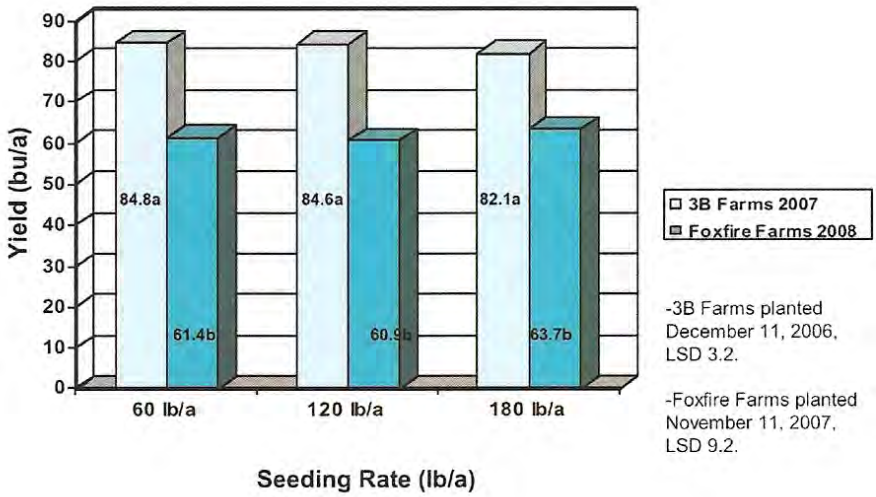
Hairy vetch was seeded in the fall of 2007. The herbicides were applied on April 14, when the hairy vetch was 18 to 24 inches tall and prior flowering. Herbicides were applied with a CO^2 back-pack sprayer delivering 15 GPA with an 8002 flat fan nozzle. Plots were eight feet wide and twenty-five feet long. A randomized complete block plot design was used with five replications. Control ratings were recorded 16 and 23 day following herbicide application.

Gramoxone Inteon, 2,4-D + dicamba, and 2,4-D provided best control , 97% plus, twenty-three days following application. Roundup Original @ 2 qt/a and dicamba provided 83% and 81 % control, respectively, twenty-three days following application. Roundup Original @ 1 qt/a and Harmony Extra produced the weakness control, less than 50%, at twenty-three days following application. See the following graph.

Selected herbicides impact on hairy vetch control, Foxfire Farms, Beaufort County 2008.



Impact of seeding rate on wheat yield, 3 B Farms 2007, and Foxfire Farms 2008, Beaufort County.



Yield comparison of three seeding rates and two planting dates, Bishop Farm 1999, Grissom Farm 2000, Benson Farm 2001, and Haslin Farms 2002, Beaufort County.

	Bishop Farm[1]		Grissom Farm[2]		Benson Farm[3]		Haslin Farm[4]		Four Year Average	
Seeding Rate (lb/a)	Early Planted Yield (bu/a)	Late Planted Yield (bu/a)	Early Planted Yield (bu/a)	Late Planted Yield (bu/a	Early Planted Yield (bu/a)	Late Planted Yield (bu/a	Early Planted Yield (bu/a)	Late Planted Yield (bu/a)	Early Planted Yield (bu/a)	Late Planted Yield (bu/a)
60	76.7	50.0	58.8	67.1	61.1	86.2	53.6	52.9	62.6	64.1
120	79.6	68.4	63.5	69.3	53.7	88.3	53.3	58.1	62.5	71.0
180	69.1	71.9	59.3	71.3	49.1	86.2	48.6	57.4	56.5	71.7
Average	75.1	63.4	60.5	69.2	54.6	86.9	51.8	56.1	60.5	68.9

[1]Bishop Farm – early planted October 21, late planted November 23
[2]Grissom Farm – early planted October 31, late planted November 23
[3]Benson Farm – early planted October 23, late planted November 21
[4]Haslin Farms – early planted October 20, late planted November 19.

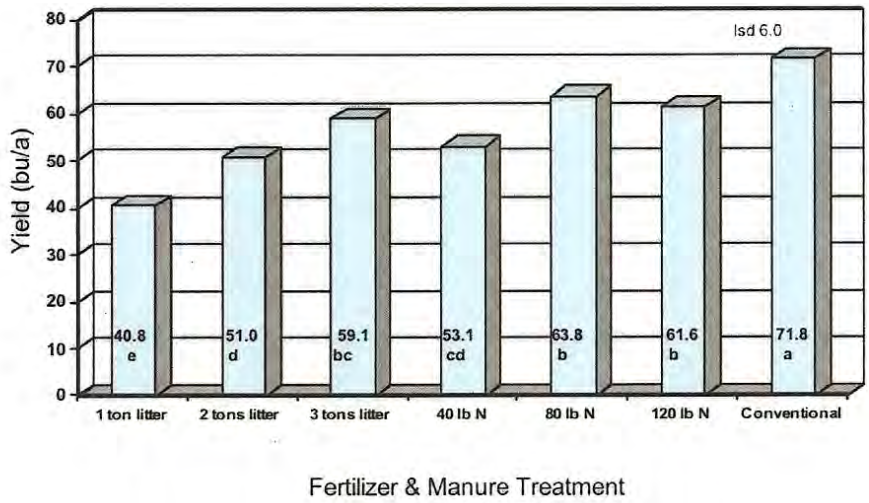
60 lb/a = 8 to 9 plants/row ft; 120 lb/a = 18 to 20 plants/row ft; 180 lb/a = 18 to 20 plants/row ft (7 inch drill spacing)

Composted Layer Manure as a Fertilizer Source

An on-farm-test was conducted on Foxfire Farms comparing composted chicken layer manure to commercial fertilizer. The soil type was a Lenoir loam and the prior crop was tobacco. The manure was applied and soil incorporated at one, two, and three tons per acre on October 23. The wheat (Tribute) was planted on November 8. The estimated amount of plant available N, P_2O_5, and K_2O per ton of manure was 50, 40, and 50 pounds per ton, respectively. The nitrogen only treatments received 40, 80, and 120 pounds per acre of topdress nitrogen and was applied on March 14 in the form of ammonium nitrate. The conventional treatment received a preplant incorporate application of N, P, K, and S at the rate of 25, 45, 75, and 25 pounds per acre, respectively. The conventional treatment also received 125 pounds per acre of topdress nitrogen on March 14. A randomized complete block plot design was used with four replications. The plots size was seven feet wide and forty feet long. The plots were harvested June 14.

The conventional treatment was the highest yielding. The second highest yielding treatments were 80 and 120 lb/a of N and the 3 tons/a of manure, followed by 2 tons/a of manure. The lowest yielding treatment was 1 ton/a of manure.

Comparison of composted chicken manure and commercial fertilizer on wheat yield, Foxfire Farms, Beaufort County 2008.



Hessian Fly Control Test

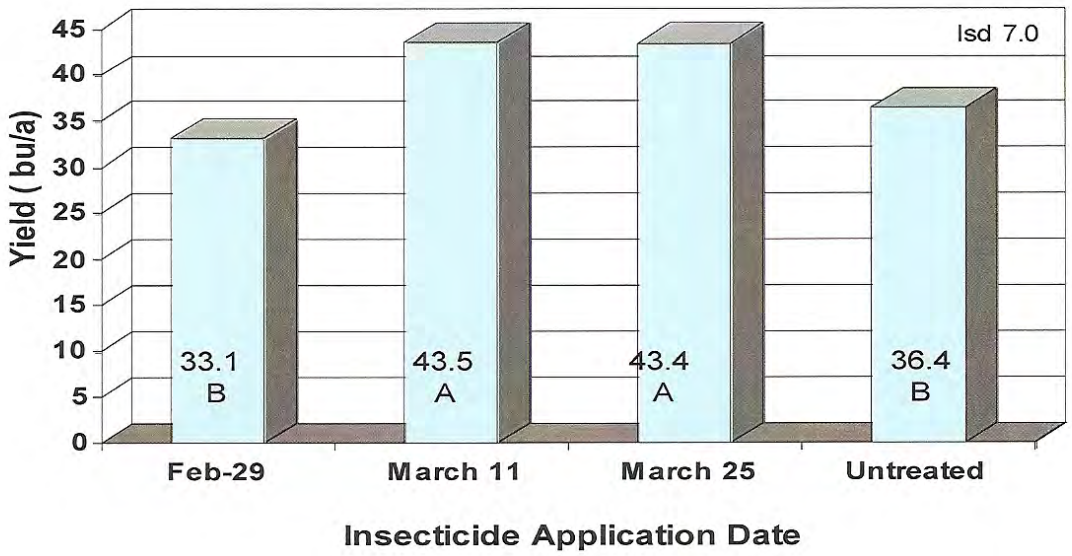
In the late winter and early spring of 2008 a significant infestation of Hessian fly was found in many wheat fields in our region. The range of Hessian fly infested wheat tillers ranged from 5% to 80% across the region. The factors that most likely contributed to the highest infestations included wheat planted no-till following double cropped soybeans after wheat, non-resistant varieties to Hessian fly, wheat planted near fields that were infested with Hessian fly the prior year, and to a lesser extinct planting date.

In 2000 an on-farm-test was conducted to evaluate the impact of a Warrior application to control the spring generation of Hessian fly on a heavily infested (36% of tiller containing pupae) with Hessian fly pupae. The mid-March application of Warrior had a significant impact on controlling Hessian fly and in turn improving wheat yields (Table 3).

Table 3. Early spring Hessian fly control with insecticide in fall infested wheat, 3B Farms 2000.

Treatments*	Eggss/10 leaves**	HF/5 plants***	Yield Bu/a
Warrior @ 2.6 oz/a	12.3c	41.2c	48.2a
Warrior @ 3.8 oz/a	5.0c	23.3c	56.7a
Warrior @ 2.6 oz/a 2X	8.0c	16.2c	58.1a
Untreated	32.3b	131.8a	17.7b

- sprayed March 13; ** on March 20; *** on April 6

In 2008 two on-farm-tests were conducted to evaluate the time of Warrior application for early spring Hessian fly control. The tests were conducted on 3B Farms and on Respess Farms in the Vann Swamp Community and Hessian fly pupae tiller infestation was 35% and 70%, respectively. The three times of insecticide application were February 29, March 11, and March 25. Warrior was applied at @ 3.8 oz/a for each respective treatment. Warrior applications on March 11 and March 25 resulted in a significant increase in wheat yield. Warrior applied on February 29 had no significant impact on wheat yield (Graph 9).

Graph 9. Impact of the time of application of insecticide on wheat yield for control of spring generation of Hessian fly, 3B Farms and Respess Farms, Beaufort County 2008.