2006 Virginia On-Farm Corn Test Plots

A summary of replicated research conducted by Virginia Cooperative Extension in cooperation with local producers

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2006 Virginia On-Farm Corn Test Plots

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The research and demonstration plots discussed in this publication are a cooperative effort by ten Virginia Cooperative Extension agents, numerous producers, several Extension specialists, local soil and water conservation districts, a summer Extension intern, and many members of the agribusiness community.

The fieldwork and printing of this publication is mainly supported by the Virginia Corn Check-Off Fund through the Virginia Corn Board. Anyone who would like a copy should contact their local Extension agent, who can request a copy from the Northumberland County Extension office.

This is the fifteenth year of this multi-county cooperative project. Further work is planned for 2007.

The authors wish to thank the many producers and agribusinesses that participated in these research and demonstration plots. Special thanks are due to Almeda McKenney in the Northumberland office for her efforts in putting this book together.

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General Summary

These studies provide information that can be used by Virginia corn growers to make better management decisions on their farms. Refer to individual plots for discussion of the results.

This is the second year of testing the value of GMO hybrids. Seed companies are increasingly offering double- and even triple-stacked genes to producers, but these come at a cost. Across all sites, there was not much difference in yield across technologies – this year or last; however, conventional herbicide systems were used and European corn borer pressure has generally been low. Average yields across two years indicate that all the hybrids perform about the same in the absence of any major corn borer pressure. Where corn borers and/or corn earworms are a problem, selection of a Bt hybrid is advisable. Remember that a non-Bt reserve must be planted in the field. Where weed problems necessitate something more than our standard weed control programs, an RR hybrid may help. However, we still recommend alternating herbicides with different modes of action to fight weed resistance and maintain glyphosate as an effective weed control option.

This is the first year of replicated tests for optimum plant populations. We saw positive or neutral results to increasing corn populations in the field, depending on site. From this year's data, it seems that final stands around 26,000 plants per acre are capable of excellent yields where soil type, water, and fertility allow for it. Where poor soils limit yield potential, populations around 20,000 should be sufficient to optimize yield. Because our studies did not look at populations much above 30,000, we were not able to capture any "yield plateaus" in our charts (see individual plots). Next year, we plan to repeat this set of experiments and include higher populations.

This is also the first year looking at aerial applications of fungicides to corn at the silking/tasseling growth stage. While a couple of sites showed statistically-significant yield increases with fungicides, overall the data was neutral. Bear in mind that disease pressure was far lower across Eastern Virginia than the past two years, so we plan to repeat this experiment next year in case disease pressure is higher.

Corn hybrid selection is as difficult as it has ever been. With more seed companies and more GMO options and seed treatment packages than ever before, it can be very difficult to decide which hybrids to plant. This year, Ernesto gave us a good look at standability so look at the lodging ratings contained in the individual studies. Also, drought conditions hit some plots while others received plentiful rainfall so we got a good look at how hybrids performed under optimum and stress conditions. See individual trials for more details.

2006 Corn Hybrid Comparison by Maturity – All Sites*

* Data presented here are limited to hybrids where data was available for all entered locations.

Early-Maturing Hybrids

Company	Hybrid	Traits	Charles City	Lancaster	King & Queen	AVG ALL SITES
Asgrow	RX674RR2	RR2	210	210	118	179
Doeblers	648RYG	YGCB/RR	187	188	147	174
Augusta	A3387		194	182	142	173
DeKalb	DKC57-79	RR2/YGRW	186	194	135	172
Southern States	SS604	RR/YGCB	184	170	149	168
TA Seeds	TA6993	YGCB/RR	178	190	130	166
Vigoro	V4860		182	180	122	161
Trisler	T5244CB	CB	172	178	131	160
Pioneer	35P10	YGCB, RR	186	160	131	159
Hubner	H4345BL	YGCB/Liberty Link	183	172	120	158
Mycogen	2G626	YGCB	179	164	132	158
Chemgro	6350	RR/YGCB	170	170	134	158
Dynagro	55B65		173	180	121	158
Fielder's Choice	76585PH	RR/YGCB	174	150	140	155
NK	N58L8	Bt/Liberty Link	169	160	106	145
Location Average:			*182*	*177*	*131*	*163*

Mid-Maturing Hybrids

Company	Hybrid	Traits	Charles City	Lancaster	King & Queen	Middlesex	Prince George	Ag Expo	Amelia	Westmoreland	Chesapeake	AVG ALL SITES
DeKalb	DKC61-68	RR2/YGRW	204	230	129	159	108	177	113	173	162	162
Asgrow	RX754	RR2/YGRW	204	210	132	154	103	168	85	157	150	151
Doeblers	653BWR	YGPlus/RR	177	192	146	148	129	148	106	171	140	151
Hubner	H3487		203	154	136	148	122	155	114	165	154	150
Chemgro	7323	RR/YGCB	200	170	135	139	143	132	98	166	141	147
Pioneer	34A16	Bt/ Liberty	185	158	137	136	127	176	99	162	129	145
Augusta	A5253HX	Bt	194	178	145	128	119	117	107	154	154	144
S. States	SS745	CL	163	176	129	138	126	153	84	149	136	139
Fielders Choice	77925PH	RR/YGCB	188	166	140	124	97	164	82	149	136	138
Location Avg.:			*191*	*182*	*137*	*142*	*119*	*154*	*99*	*161*	*145*	*148*

Full-Maturing Hybrids

Company	Hybrid	Traits	Charles City	Middlesex	Prince George	Ag Expo	Amelia	Chesapeake	AVG ALL SITES
Vigoro	V58YR2	YGCB/RR2	194	144	145	183	145	177	161
Pioneer	33M57	Bt/Liberty Link/RR	216	151	138	197	95	160	160
Chemgro	7740	YGCB	200	156	122	183	78	193	155
Hubner	H3799		197	140	134	173	98	181	154
Doeblers	785RB	YGCB/RR	200	151	121	170	91	163	149
Fielder's Choice	7850BPH	RR/YGCB	194	150	97	185	86	171	147
Southern States	SS842	RR/YGCB	195	122	113	206	92	154	147
Asgrow	RX785RR2/YGCB	RR2/YGCB	201	138	106	170	97	157	145
DeKalb	DKC67-23	RR2/YGCB	208	123	82	164	103	172	142
Location Average:			*201*	*142*	*118*	*181*	*98*	*170*	*151*

Ag Expo Corn Hybrid Trial

Cooperators: **Producer:** Jimmy Bowen, Beauregard Farms
Extension: Carl Stafford, Culpeper
Wade Thomason, Virginia Tech
Agribusiness: Various Seed Company Reps
Variety: Various, Check = Pioneer 33M53
Soil Type: Davidson loam
Planted: April 19, 2006
Seed Rate: 29,000, 1.5-2 inches deep
Equipment: Kinze 12-row
Row Width: 30 inches
Fertilization: Biosolids – 125 lb N, 250 lb P
Pesticides: 1.0 qt Simazine, 2.5 qt Atrazine, 0.083 oz Harmony GT, 4.0 oz Banvel
Harvested: September 26, 2006 w/ Case 2388

Hybrid	% Moisture	Bu/Ac Yield
CHECK, PIONEER 33M53	19.8	161
SOUTHERN STATES 842 RRYGCB	19.0	206
VIGORO 58YR2	21.7	183
MYCOGEN 2J744	18.7	192
FIELDERS CHOICE 7850B	20.8	185
DYNAGRO 57F37	18.9	206
AUGUSTA 5338P	20.5	196
ASGROW RX785	18.2	170
TA SEEDS 780-13	19.9	201
DOEBLERS P785RB	21.3	170
DEKALB 67-23	20.1	164
CHEMGRO 7740 Bt	21.4	183
NK N76M5	21.2	182
TRISLER 5252 HX	19.6	106
PIONEER 33M57	21.9	197
HUBNER 3487	17.7	155
CHECK, PIONEER 33M53	20.8	170
DYNAGRO 57F06	18.4	176
NK N72G8	20.5	153
CHEMGRO 7323 RRBt	16.3	132
TRISLER 5175 HX	20.3	168
HUBNER 3799	20.4	173
AUGUSTA 5253 HX	20.7	117
DEKALB 61-68	17.5	177
SOUTHERN STATES 745 BtCL	19.6	153
DOEBLERS 653 BWR	17.2	148
VIGORO 52Y61	17.8	171
TA SEEDS 686-03	16.8	179
FIELDERS CHOICE 77925	17.1	164
PIONEER 34A16	17.9	176
ASGROW RX754RR	17.9	168
CHECK, PIONEER 33M53	19.4	172

Mid and Late Corn Hybrid Comparison

Cooperators: **Producer:** Clem and Keith Horsley
Extension: David Moore, Middlesex
Keith Balderson, Essex
Agribusiness: Participating Seed Suppliers
Previous Crop: Soybeans
Soil Type: Meggett Sandy Loam
Planting Date: April 20, 2006
Fertilization: 170-50-120-15S-2Zn
Crop Protection: Lumax 5.0 pt, Atrazine 1.0 pt, Simazine 1.0 pt
Check Hybrid: Pioneer 33M54 (No Treatment)
Harvest Date: September 27, 2006

Variety	Treatment	Stand Count	% Moisture	Yield @ 15.5%	Standability
Check (P33M54)		26000	16.3	159	2
Asgrow RX754	P250/RR/YGRW	26500	15.8	154	2
Check			15.5	144	2
Asgrow RX785	P250/RR/YGCB	23500	15.5	138	2
Augusta A5253	P250/HX	25000	15.7	128	4
Check			15.6	153	2
Augusta A5338	P250	26000	15.6	153	4
Campbell Seed 6560	P250/CNA	25500	15.6	137	3
Check			15.7	150	2
Campbell Seed 7700	P250/CNA/YGCB	25500	15.5	128	4
Chemgro 7323	P250/RR/YGCB	25500	15.3	139	4
Check			15.6	149	3
Chemgro 7740	P250/YGCB	25000	15.3	156	4
Dekalb 61-68	P250/RR/YGRW	27000	15.3	159	3
Check			15.5	147	2
Dekalb 67-23	P250RR/YGCB	24500	15.4	123	4
Doebler's 653	P250/RR/YG+	23500	15.2	148	5
Check			15.4	149	3
Doebler's 785	P250/RR/YGCB	25000	15.3	151	3
Dyna-Gro 57F06	P250/YGCB	24000	15.3	135	3
Check			15.3	165	2
Dyna-Gro 57F37	P250/YGCB	21500	15.3	132	2
Fielder's Choice 77925	P1250/RR/YGCB	26000	15.1	124	3
Check			15.3	154	2
Fielder's Choice 7850B	P1250/RR/YGCB	25500	15.0	150	2
Hubner Seed 3487	P250	24000	14.7	148	3
Check			15.2	138	2
Hubner Seed 3799	P250	24500	14.7	140	3
Mycogen 2C727	CRU/HX/LL	25000	14.9	128	4
Check			15.1	144	2
Mycogen 2J774	CRU/HX/LL	25000	15.1	150	2
NK N72-G8	CRU/Bt/LL	27000	15.0	128	3
Check (Error-not included)					
NK N76-M5	CRU/Bt/LL	22500	15.3	136	3
Pioneer 34A16	P250/HX/LL	25000	15.1	136	2
Check			15.4	149	1
Pioneer 33M57	P250/RR/HX/LL	25500	15.3	151	2
Southern States 745	CL	24500	15.5	138	3

Mid and Late Corn Hybrid Comparison (cont.)

Variety	Treatment	Stand Count	% Moisture	Yield @ 15.5%	Standability
Check			15.7	157	2
Southern States 842	RR/YGCB	27000	17.6	122	5
TA Seeds 686-03	P250/RR/YGCB	27000	15.1	137	4
Check			15.5	135	2
TA Seeds 780-13	P250/RR/YGCBRW	21500	15.4	145	3
Trisler 5175	P250/YGCB	21000	15.1	110	2
Check			15.3	127	1
Trisler 5337	P250/YGCB	23500	15.5	127	3
Vigoro V52Y61	CRU/YGCB	19000	15.1	122	2
Check			15.1	146	2
Vigoro V58YR2	CRU/RR/YGCB	22000	15.6	144	3
Check			16.8	126	2

Treatment Code:
P250: Poncho 250 Seed Treatment
P1250: Poncho 1250 Seed Treatment
CRU: Cruiser Seed Treatment
RR: Roundup Ready Genetics
YGCB: Yield Guard Corn Borer
YGRW: Yield Guard Rootworm
YG+: Yield Guard Plus (Both CB and RW)
HX: Herculex Genetics for Corn Borer
LL: Liberty Link Genetics for Grasses
CNA: Captan/Allegiance

Discussion: 2006 was the year that was "too": too cool, too hot, too wet, too dry. This plot received an abundance of rain shortly after planting that slowed growth and put young seedlings under stress. It experienced early season cool temperatures much like all the corn in the coastal plain region. When the plot was approaching tassel, it became hot and dry which greatly affected the yield potential of this plot. Overall the yields were average to good. Tropical Depression Ernesto blew many of the hybrids down. Notice the ratings included in the results. (1=Standing, 5 = Completely Down) Deer pressure was significant. The Horsleys noticed that some hybrids received more deer browsing than others. Notice too, the treatments that hybrids received. A lot of money can be spent on traits and genetics. Thanks go to Keith and Clem Horsley for their assistance and patience with this plot. Use this and other Virginia Tech corn hybrid comparison information when making planting decisions for 2007.

2006 Dinwiddie/Prince George Corn Variety Trial

Cooperators: **Producer:** Glenn Chappell, Sr.
Extension: Glenn F. Chappell II
Planting Date: April 27, 2006
Plot: Variety
Population: 24,000
Soil: Emporia sandy loam
Herbicides: 1.5 qt Gly4, 2.0 qt Bicep II + 1.0 qt simazine
Tillage: No-till
Fertility: 600 10-10-10 broadcast at planting 100 lbs N sidedress
Harvest: September 21, 2006

Company	Hybrid	Mid	Full	%H20	Bu/Ac	% of Check
Check	A 5234			17.9	107	
Asgrow	RX 754 RR2/YGRW	X		17.8	103	99%
Asgrow	RX 785 RR2/YGCB		X	18.1	106	103%
Augusta Seed	A5253 HX	X		21.3	119	114%
Augusta Seed	A5338		X	21.2	142	136%
Chemgro Seed	7323RRBT	X		19.8	143	137%
Chemgro Seed	7740BT		X	23.1	122	117%
Check	A 5234			17.8	101	
Dekalb	DKC 61-68	X		17.5	108	113%
Dekalb	DKC 67-23		X	20.4	82	86%
Doebler's Hybrids, Inc.	Doeblers 653BWR	X		19.1	129	135%
Doebler's Hybrids, Inc.	Doeblers 785RB		X	21.0	121	127%
Fielder's Choice Direct	77925-PH	X		17.8	97	102%
Fielder's Choice Direct	7850B-PH		X	19.2	97	102%
Check	A 5234			18.0	90	
Hubner Seed	H3487	X		19.4	122	120%
Hubner Seed	H3799		X	21.3	134	133%
Mycogen Seed	2C727	X		20.6	140	138%
Mycogen Seed	2J774		X	19.6	116	115%
NK Brand	N72 G8	X		18.1	109	107%
NK Brand	N76-M5		X	20.5	117	115%
Check	A 5234			16.6	113	
Pioneer	34A16	X		18.3	127	100%
Pioneer	33M57		X	19.0	138	109%
Southern States	SS 745	X		19.0	126	99%
Southern States	SS 842		X	21.2	113	90%
T. A. Seeds	TA 6993	X		19.9	128	101%
T. A. Seeds	TA 780-13		X	20.4	151	120%
Check	A 5234			17.6	140	
Trisler by Augusta	T5175CB	X		18.9	147	105%
Trisler by Augusta	T5337CB		X	20.0	147	105%
Vigoro	V52Y61	X		18.9	136	97%
Vigoro	V58YR2		X	21.7	145	104%
Dynagro	57F06	X		17.7	166	119%
Dynagro	57F37		X	19.0	166	119%
Check	A 5234			16.6	139	

* Check variety = Augusta 5234
** % of Check = Variety yield divided by the average of the closest check varieties.

Discussion: The summer through pollination was very dry, negatively impacting pollination and yield. Even with the late-season wind and heavy rains, all hybrids stood well with no significant lodging.

2006 Corn Hybrid Demonstration Plot

Cooperators: **Producer:** Allen Tignor, Jr.
Extension: Keith Balderson, Essex

Hybrid: Various
Planting Date: April 20, 2006
Seedbed Preparation: No-till
Fertilization: Starter: 10 gallons per acre of 15-15-0 plus micros
Broadcast: 1.0 ton pelleted bio-solids/ac and 90.0 lb potash/ac
Sidedress: 70.0 lb N/ac
Herbicides: Burndown: Gramoxone
Pre-emergence: Bicep, atrazine, and simazine
Harvest Date: October 12, 2006

Hybrid	%Moisture	Yield (Bu/Ac @ 15.5)
Augusta 5175CB	16.8	175
Trisler 2744CB (poor stand)	16.0	112
Garst 7662YG	17.6	188
Augusta 5175CB	17.0	151
Augusta 5234CB	17.0	141
Augusta 4495	17.0	144
Trisler 5257CB	16.8	172
Pioneer 34A15	17.0	161
Garst 8461	17.8	153
Pioneer 34K78YG	17.1	141
Augusta 5337	17.8	177

Discussion: Allen Tignor has been setting up this type of plot on his farm for several years now to evaluate hybrids he produces and other potential hybrids. In this plot, some of the variation in yields can be attributed to stand differences not associated with the hybrids. Part of the problem was the fact that the field was sprayed after planting with a Terra-Gator, and the stand was reduced in some of the hybrids by this surface compaction. We decided to report this data because some of these hybrids are relatively new and this at least provides some yield data. Use replicated data over several locations and years when choosing hybrids for 2007.

2006 Corn Hybrid Comparison Plot

Cooperators: **Producer:** Wayne and David Burch
Extension: David Moore, Middlesex
Keith Balderson, Essex
Hybrid: Pioneer 31G96 with P250 vs. Seed Consultants 10RR91 (untreated)
Planting Date: April 17, 2006
Seedbed Preparation: No-till
Fertilization: 140 lb N/ac split applied and phosphate potash according to soil sample
Herbicides: Burndown: Gramoxone
Pre-emergence: Bicep
Post-emergence: Glyphosate
Harvest Date: October 6, 2006

Hybrid	Rep.	%Moisture	Yield (Bu/Ac @ 15.5)
Pioneer 31G96	1	16.3	169
Seed Consultants 10RR91	1	15.5	162
Pioneer 31G96	2	15.5	165
Seed Consultants 10RR91 2	2	15.4	176
Pioneer 31G96	3	16.0	172
Seed Consultants 10RR91	3	15.5	159

Averages		
Pioneer 31G96	15.9	169
Seed Consultants 10RR91	15.5	166

Discussion: Both hybrids yielded well and statistically there was no difference in yields. Tropical Storm Ernesto and a thunderstorm on September 28 caused significant lodging in the SC hybrid and some lodging in the Pioneer hybrid. Lodging in the SC 10RR91 hybrid was estimated at 60% or more, while lodging in the Pioneer 31G96 hybrid was estimated at less than 20%. Harvest losses in both hybrids were relatively low. The Burches noticed wireworms feeding early in the season, and the damage was worse in the SC 10RR91 hybrid, indicating that the Poncho 250 seed treatment on the Pioneer 31G96 hybrid provided some control.

2006 King and Queen Corn Hybrid Demonstration Plot

Cooperators:
Producer: Latane Trice
Extension: Keith Balderson, Essex
David Moore, Middlesex
Agribusiness: Cooperating Seed Companies

Previous Crop: Soybean
Soil Type: Sandy loam
Hybrid: Various
Fertilization: 70-46-90 broadcast
60 lb N/ac sidedress
Planting Date: April 18, 2006
Seedbed Preparation: No-till, Turbo-Till used just prior to planting
Herbicides: Burndown: Gramoxone
Pre-emergence: 2.0 qt Bicep/ac, 1.0 qt Atrazine/ac, 1 qt Princep/ac
Harvest Date: September 25 and 26, 2006

Hybrid	Genetic Traits	Seed Treatment	% Moisture	Yield (Bu/Ac @15.5)	% of Check
Asgrow RX 674	RR2	P250	17.5	118	84
Asgrow RX 754	RR2/ YGRW	P250	18.7	132	94
Augusta 3387	P250	18.4	142	101	
Augusta 5253	HX	P250	19.9	145	103
Check-Augusta 5160	YGCB	P250	19.4	141	
Chemgro 6350	RR/Bt	18.0	134	96	
Chemgro 7323	RR/Bt	P250	19.0	135	97
Dekalb 57-79	RR2/YGPL	P250	17.4	135	97
Dekalb 61-68	RR2/ YGRW	P250	17.8	129	92
Check	YGCB	P250	19.6	138	
Doeblers 648 RYG YGCB/RR	YGCB/RR	P250	17.9	147	106
Doeblers 653 BWR YGPL/RR	YGPL/RR	P250	9.8	146	105
Fielders Choice 76585 PH	YGCB/RR	P1250	17.3	140	101
Fielders Choice 77925 PH	YGCB/RR	P1250	18.9	140	101
Hubner 4345BL	YGCB/LL	P250	17.4	120	87
Hubner 3487		P250	18.1	136	98
Mycogen 2G626	YGCB	Cruiser Extreme	16.8	132	95
Mycogen 2C727		Cruiser Extreme	19.0	125	90
NK N58-L8			16.8	106	76
NK N72-G8			19.0	125	90
Check	YGCB		19.3	139	
Pioneer 35P10	YGCB/RR	P250	17.0	131	97

2006 King and Queen Corn Hybrid Demonstration Plot (cont.)

Hybrid	Genetic Traits	Seed Treatment	% Moisture	Yield (Bu/Ac @15.5)	% of Check
Pioneer 34A16	HX/LL	P250	18.7	137	101
SS 604	RR/YGCB		19.0	149	108
SS 745	Clearfield		19.5	129	95
Trisler 5244	YGCB	P250	18.4	131	97
Trisler 5175	YGCB	P250	18.8	130	94
Vigoro 4860		Cruiser Extreme	18.3	122	90
Vigoro 52Y61	YGCB	Cruiser Extreme	18.9	136	100
Dyna-Gro 55B65		16.5	121	89	
Dyna-Gro 57F06		18.0	129	95	
Check	YGCB	P250	18.2	132	
Campbell 6120		Kernel Guard	17.2	124	94
Campbell 6560	RR/Bt	P250	18.1	127	96
T.A. Seeds 686-03 YGCB/RR	YGCB/RR	P250	18.4	119	88
T.A. Seeds 6993			18.8	130	98

Discussion: This corn plot was under drought stress periodically throughout the growing season. A few timely rainfall events resulted in relatively good yields. All of the hybrids withstood the events of Tropical Storm Ernesto as lodging was not a problem. Consult replicated data and review the results of the other demonstration plots prior to selecting hybrids for 2007.

2006 Corn Hybrid Comparison Plot

Cooperators: **Producer:** Keith and C.O. Balderson
Extension: Keith Balderson, Essex
Sam Johnson, Westmoreland
Agribusiness: Dennis Rawley, Augusta Seed Co.
Ginny Barnes, Pioneer Hi-Bred

Hybrid: See below
Planting Date: April 10, 2006
Seedbed Preparation: No-till
Fertilization: Broadcast: 50-60-60/ac
Sidedress: 90-0-0-11/ac
Soil Type: Kempsville sandy loam
Herbicides: Burndown: Gramaxone
Pre-emergence: Bicep, Atrazine, and Princep
Harvest Date: September 12, 2006

Hybrid	Rep	% Moisture	Yield (Bu/A @ 15.5%)
Augusta 5175	1	19.8	162
Pioneer 34K77	1	19.6	160
Augusta 5175	2	19.9	156
Pioneer 34K77	2	18.4	152
Pioneer 34K77	1	18.0	141
Augusta 5234	1	17.3	135
Pioneer 34K77	2	18.2	136
Augusta 5234	2	17.0	130
Averages:			
Augusta 5175		19.8	159
Pioneer 34K77		19.0	156
Pioneer 34K77		18.1	139
Augusta 5234		17.1	133

Discussion: This plot evaluated the performance of Pioneer 34K77 against Augusta 5175 and Augusta 5234. Augusta 5175 yielded higher than Pioneer 34K77, while Pioneer 34K77 yielded higher than Augusta 5234.

2006 Corn Hybrid Comparison Plot

Cooperators:	**Producer:**	Philip Minor Farms
	Extension:	Keith Balderson, Essex
	Agribusiness:	Dennis Rawley, Augusta Seed Co.
		Ginny Barnes, Pioneer Hi-Bred
Hybrid:	See Below	
Planting Date:	April 5, 2006	
Seedbed Preparation:	No-till	
Fertilization:	Starter:	35-10-0/ac
	Broadcast:	35-0-90/ac
	Sidedress:	75-0-0-3/ac
Herbicides:	Burndown:	0.5 pt Gramoxone/ac + 0.5 pt 2,4-D/ac
	Pre-emergence:	2.5 qt Lumax/ac + 1.0 qt Simazine/ac
Harvest Date:	September 13, 2006	

Hybrid	Rep	% Moisture	Yield (Bu/Ac @ 15.5 %)
Pioneer 33V15	1	19.0	148
Augusta 5175	1	19.4	147
Augusta 5234	1	17.8	143
Pioneer 33V15	2	18.8	152
Augusta 5234	2	17.8	143
Augusta 5175	2	19.4	151
Averages:			
Pioneer 33V15		18.9	150
Augusta 5175		19.4	149
Augusta 5234		17.8	143

Discussion: This plot was replicated four times, but there was an old logging road that affected replications 3 and 4. Therefore, only yields from two replications are reported. Yields across these two replications were very consistent. Yields for Pioneer 33V15 and Augusta 5175 are not statistically different. Augusta 5234 yields were lower, but this hybrid was the driest hybrid in the plot.

2006 Lancaster County Corn Hybrid Demonstration Plot

Cooperators: **Producer:** Jock Chilton
Extension: Matt Lewis, Nor/Lan
Philip Henley, Summer Intern
NNSWCD: Dwight Forrester
Agribusiness: Various Seed Company Reps
Variety: Various, Check = Hubner 4473RRYGCB P1250
Soil Type: Sassafras loamy finesand
Planted: April 18, 2006 no-till
Seed Rate: 26,000/ac, 1.5 inches deep
Equipment: Kinze 12-Row Finger Pickup Planter
Row Width: 30 inches
Fertilization: 70-70-70 Broadcast, 70-0-0 Sidedress
Pesticides: 5.5 pt Lumax, 1.0 qt Princep, 1.5 qt Glyphor, 1.0 pt 2,4-D
Harvested: September 22, 2006

Company	Hybrid	Seed Trt	Traits	Early	Mid	Final Stand	Lodging*	% Moisture	Yield
Check						24500	4	18.2	196
Hubner	4345	P250	LLYGCB	X		24000	2	18.6	172
Hubner	3487	P250			X	24500	3	18.0	154
Campbell	6560	P250			X	27000	2	17.7	189
Campbell	6120	P250		X		25500	3	18.4	186
Check						26000	2	20.0	200
Pioneer	34A16	P1250	LLHX		X	27500	1	18.4	158
Pioneer	35P10	P250	RR2YGCB	X		27500	1	17.4	160
Check						26000	3	19.6	208
Chemgro	6350	?	RRYGCB	X		24500	3	19.9	170
Chemgro	7323	P250	RRYGCB		X	24000	3	18.1	170
Mycogen	2C727	CruiserX	LLHX	X		24000	3	17.8	178
Mycogen	2G626	CruiserX	YGCB		X	25000	1	18.4	164
Check						25000	3	17.4	212
Dynagro	57F06	P250	YGCB		X	23500	1	17.1	202
Dynagro	55B65	P250		X		25500	1	17.3	180
Dekalb	61-68	P250	RR2YGRW		X	26000	1	17.9	230
Dekalb	57-79	P250	RR2YG+	X		24500	1	18.2	194
Asgrow	RX754	P250	RR2		X	25000	1	17.7	210
Asgrow	RX674	P250	RR2	X		26500	1	17.7	210
Check						25500	1	17.6	240
NK	N58-L8	CruiserX		?		20000	1	16.7	160
NK	N72-G8	CruiserX		?		26000	2	17.5	200
Vigoro	V4860	CruiserX		X		26500	2	17.0	180
Vigoro	52Y61	CruiserX	YGCB		X	25500	2	17.3	200
Check						25000	2	17.7	214
Doeblers	648	P250	RRYGCB	X		24500	3	17.2	188
Doeblers	653BWR	P250	RRYG+		X	23500	3	16.9	192
Field. Choice	76585	P1250		X		25500	1	17.6	150
Field. Choice	77925	P1250			X	25000	1	17.8	166
South. States	604	P250	RR2YGCB	X		26000	1	18.2	170
South. States	745	?	YGCBCL		X	25500	1	18.0	176
TA Seeds	686-03	P250	RRYGCB		X	25000	1	17.7	178
TA Seeds	6993	P250	RRYGCB	X		25500	3	18.2	190
Check						26000	2	18.5	194
Augusta	5253	P250	HX		X	24500	2	17.9	178
Augusta	3387	P250		X		24500	2	17.9	182
Trisler/Augusta	5244	P250	YGCB	X		23500	1	18.1	178
Trisler/Augusta	5175	P250	YGCB		X	24000	1	18.8	184
Check						24000	2	20.4	208

* Lodging on a 1 – 5 scale, where 1 is standing and 5 is flat.

Discussion: Another year of adequate rainfall led to excellent yields that ranged from 150 to 240 bu/acre. This trial evaluated early- and mid-maturing corn hybrids of 112 days RMA or less. Tropical Storm Ernesto caused significant lodging, which varied in intensity across hybrids. 2006 was definitely a year in which stalk strength was a large factor in overall performance of corn hybrids. Compare results of this plot to those of identical plots located throughout Eastern Virginia, published elsewhere in this book, as well as other Virginia Cooperative Extension corn hybrid trials.

Dan and Craig Brann's RRBt Corn Hybrid Trial

Cooperators: **Producer:** Dan and Craig Brann
Extension: Matt Lewis, Northumberland/Lancaster
Agribusiness: Various Seed Company Reps
Variety: Various, Check = SS604
Soil Type: Sassafras fine sandy loam
Planted: April 14, 2006 no-till
Seed Rate: 25,000 / acre
Equipment: JD MaxEmerge 7000 6-Row Finger-pickup w/ Starter
Row Width: 30 inches
Fertilization: 17 gal 20-10-0 + Zn and Mn starter, 0-0-50 broadcast
Pesticides: 2.4 qt Harness, 1.0 pt Atrazine, 1.0 qt Princep, 2.0 oz Warrior
Harvested: September 18, 2006

Rep	Hybrid	% Moisture	Lodging*	Yield (Bu/Ac)
1	Southern States 604	21.8	3	177
1	Dynagro 57B47	23.2	2	178
1	Dynagro 55B65	22.2	4	165
1	Asgrow RX702	22.5	2	154
1	Dekalb DKC 61-45	21.6	2	166
1	Vigoro 58YR2	21.6	2	177
1	Vigoro 52YR52	21.9	4	175
1	Pioneer 34B94	22.4	1	180
1	Pioneer 34B20	21.6	1	172
1	Trisler by Augusta T5240	21.5	1	149
1	Trisler by Augusta T5337	20.3	4	172
2	Southern States 604	20.9	4	173
2	Dynagro 57B47	20.6	3	167
2	Dynagro 55B65	21.7	2	177
2	Asgrow RX702	21.3	3	151
2	Dekalb DKC 61-45	21.4	1	143
2	Vigoro 58YR2	21.7	2	160
2	Vigoro 52YR52	21.5	3	165
2	Pioneer 34B94	22.0	1	168
2	Pioneer 34B20	21.9	1	170
2	Trisler by Augusta T5240	21.4	1	152
2	Trisler by Augusta T5337	20.9	1	151
3	Southern States 604	n/a	4	n/a
3	Dynagro 57B47	20.5	3	174
3	Dynagro 55B65	21.5	2	181
3	Asgrow RX702	21.0	3	158
3	Dekalb DKC 61-45	21.3	2	151
3	Vigoro 58YR2	20.4	2	174
3	Vigoro 52YR52	21.1	4	181
3	Pioneer 34B94	21.1	1	190
3	Pioneer 34B20	21.7	1	187
3	Trisler by Augusta T5240	20.9	1	175
3	Trisler by Augusta T5337	21.2	1	169
4	Southern States 604	21.3	4	183

Dan and Craig Brann's RRBt Corn Hybrid Trial (cont.)

Rep	Hybrid	% Moisture	Lodging*	Yield (Bu/Ac)
4	Dynagro 57B47	21.2	3	171
4	Dynagro 55B65	21.9	2	180
4	Asgrow RX702	21.9	2	163
4	Dekalb DKC 61-45	21.9	2	151
4	Vigoro 58YR2	21.6	1	162
4	Vigoro 52YR52	21.2	3	179
4	Pioneer 34B94	22.0	1	186
4	Pioneer 34B20	21.3	1	188
4	Trisler by Augusta T5240	21.4	1	180
4	Trisler by Augusta T5337	20.6	1	159
4	Southern States 604	20.0	4	165
Average	Pioneer 34B94	21.9	1.0	181
Average	Pioneer 34B20	21.6	1.0	179
Average	Dynagro 55B65	21.8	2.5	176
Average	Vigoro 52YR52	21.4	3.0	175
Average	Southern States 604	21.0	3.8	175
Average	Dynagro 57B47	21.4	2.8	173
Average	Vigoro 58YR2	21.3	2.3	168
Average	Trisler by Augusta T5240	21.3	1.0	164
Average	Trisler by Augusta T5337	20.8	1.8	163
Average	Asgrow RX702	21.7	2.5	157
Average	Dekalb DKC 61-45	21.6	1.8	153
	LSD (0.05)	**0.7**	**1.1**	**10.4**
	CV	**2.2**		**4.2**

* Lodging on a scale from 1 to 5, where 1 is standing and 5 is flat.

Discussion: This plot was designed to help Dan and Craig Brann determine the best RRBt hybrids for their farm. Yields were excellent given the dry weather during grain fill, ranging from 153 to 181 bushels per acre. Tropical Storm Ernesto caused significant lodging in some hybrids, as shown in the table. Please consult this and other Virginia Cooperative Extension yield trials when choosing new corn hybrids to plant on your farm.

2006 New Kent / Charles City Corn Hybrid Trial

Cooperators: **Producer:** Evelynton Farm, Charles City
Extension: Paul Davis, New Kent/Charles City
Agribusiness: Various Seed Company Reps
Jim Wallace and Brian Noyes, Colonial SWCD

Planted: April 11, 2006
Hybrid: Various, Check = Trisler 5234Bt
Tillage: No-Till Previous
Crop: Double Crop Soybeans
Soil Type: Wickham, fine sandy loam
Seed Rate: 25,000
Fertilizers: Starter: 60-30-0-.5 Zn
Broadcast: 100 lb Potash
Sidedress: 100 lb 24% N
Herbicide: Atrazine 3.0 pt April 7, 2006
Princep 3.0 pt April 7, 2006
Roundup Ultra 22.0 oz. April 7, 2006
Harvested: September 11, 2006

Row	Company	Hybrid	Early	Mid	Late	% H_2O	Bu/A	% of Ck*	Traits	Lodging**
1	Check					18.2	200			0
2	Pioneer	35P10	X			17.9	186	98.67	YGCB, RR	0
3	Pioneer	34A16		X		17.3	185	98.14	Bt/ Liberty Link	0
4	Pioneer	33M57			X	19.2	216	114.59	Bt/Liberty Link/RR	0
5	Southern States	SS604	X			20.3	184	97.61	RR/YGCB	5
6	Southern States	SS745		X		19.1	163	86.47	CL	1
7	Southern States	SS842			X	20.7	195	103.45	RR/YGCB	6
8	Augusta	A3387	X			20.0	194	102.92		2
9	Augusta	A5253HX		X		19.6	194	102.92	Bt	1
10	Augusta	A5338			X	20.5	200	106.10		2
11	Check					19.3	177			0
12	TA Seeds	TA6993	X			18.1	178	97.00	YGCB/RR	3
13	TA Seeds	TA686-03		X		17.3	181	98.64	YGCB/RR	1
14	TA Seeds	TA780-13			X	17.9	205	111.72	CBRW/RR	1
15	Asgrow	RX674RR2	X			17.0	210	114.44	RR2	1
16	Asgrow	RX754RR2/ YGRW		X		17.8	204	111.17	RR2/YGRW	0
17	Asgrow	RX785RR2/ YGCB			X	18.3	201	109.54	RR2/YGCB	0
18	Hubner	H4345BL	X			17.9	183	99.73	YGCB/ Liberty Link	0
19	Hubner	H3487				19.0	203	110.6		4
20	Hubner	H3799				19.5	197	107.36		1
21	Check					20.0	190			1
22	Trisler	T5244CB	X			18.3	172	92.97	CB	3
23	Trisler	T5175CB				18.8	185	100.00	CB	2
24	Trisler	T5337RR				19.4	217	117.30	CB	1

2006 New Kent / Charles City Corn Hybrid Trial (cont.)

Row	Company	Hybrid	Early	Mid	Late	% H_2O	Bu/A	% of Ck*	Traits	Lodging**
25	Fielder's Choice	76585PH	X			19.5	174	94.05	RR/YGCB	1
26	Fielder's Choice	77925PH				16.9	188	101.62	RR/YGCB	0
27	Fielder's Choice	7850BPH				17.6	194	104.86	RR/YGCB	0
28	DeKalb	DKC57-79	X			18.4	186	100.54	RR2/YGRW	1
29	DeKalb	DKC61-68				17.2	204	110.27	RR2/YGRW	0
30	DeKalb	DKC67-23				18.3	208	112.43	RR2/YGCB	3
31	Check					18.0	180			1
32	Vigoro	V4860	X			17.0	182	104.00		1
33	Vigoro	V52Y61				17.0	203	116.00	YGCB	1
34	Vigoro	V58YR2			X	19.1	194	110.86	YGCB/RR2	1
35	Dynagro	57F37			X	20.1	194	110.86		3
36	Dynagro	57F06		X		18.3	201	114.86		0
37	Dynagro	55B65	X			17.1	173	98.86		0
38	Chemgro	6350	X			16.9	170	97.14	RR/YGCB	4
39	Chemgro	7323		X		19.2	200	114.29	RR/YGCB	5
40	Chemgro	7740			X	19.8	200	114.29	YGCB	1
41	Check					19.7	170			1
42	NK	N58L8	X			17.4	169	100.30	Bt/Liberty Link	0
43	NK	N72G8		X		16.0	189	112.17	Bt/Liberty Link	0
44	NK	N76-MS			X	17.4	202	119.88	Bt/Liberty Link	1
45	Doeblers	648RYG	X			19.0	187	110.98	YGCB/RR	3
46	Doeblers	653BWR		X		18.7	177	105.04	YGPlus/RR	2
47	Doeblers	785RB			X	20.7	200	118.69	YGCB/RR	1
48	Mycogen	2G626	X			20.1	179	106.23	YGCB	2
49	Mycogen	2C727		X		17.4	190	112.76	Bt/Liberty Link	2
50	Mycogen	2J774			X	17.3	180	106.82	Bt/Liberty Link	1
51	Check					17.0	167			2
		Average				18.48	190	106.20		
		Check Average				18.7	181			

* % of Ck = Hybrid yield divided by the average of the closest check varieties.
** Lodging: 0 - 10 (0=flat / 10=upright)

Discussion: Yields ranged from 163 to 217 bu/ac on this highly productive Wickham soil with an average of 190 bu/ac. The mid- and late-season hybrids yielded significantly more bu/ac than the early season hybrids, under the hot and dry growing conditions in June and July. Compare harvest moisture, standability and relative maturity after you have found the highest yielding hybrids. Use this plot and other area corn performance trials prior to making your seed corn selections for 2007.

2006 New Kent Early Season Corn Hybrid Trial

Cooperators: **Producer:** Robert Bland, Cedar Lane, New Kent
Extension: Paul Davis, New Kent/Charles City
Agribusiness: Various Seed Company Reps
Variety: Various, Check = Doeblers 649XY
Plant Population: 18,000
Planted: April 20, 2006
Fertilizer: 2 ton poultry litter + 75.0 lb N side dress
Herbicides: 26.0 oz Roundup
1.5 qt Atrazine
1.5 qt Simizir
0.5 pt 2,4-D
Date Harvested: September 26, /2006

Hybrids	Early	Mid	Full	% H_2O	Bu/Ac	% of Ck*
Check - Doeblers 649XY	X			19.5	114	
Asgrow RX702 YG P250		X		18.7	124	109
Pioneer 33M54			X	20.1	150	128
Check - Doeblers 649XY	X			19.9	117	
S.S.604 RR ZYGCB	X			18.7	141	120
Trisler 5244 CB	X			18.4	136	116
Trisler 5234 RRCB	X			17.3	120	95
Trisler 5175 CB	X			18.7	129	94
Pioneer 34A16 LLCB P1250		X		17.6	145	106
Check - Doeblers 649XY	X			19.1	137	
Pioneer 35P10 LLCB P250	X			17.0	132	96
DeKalb DKC 61-45		X		17.5	141	103
NK Brand NK58-L8 RR Cruiser Ext.	X			17.3	111	81
Check - Doeblers 649XY	X			17.5	137	
AVERAGES - Plot				**18.4**	**133**	
Check Average					**126**	

Discussion: The early hybrids did not yield as high as the mid- and full-season hybrids in this comparison. Weather conditions in June and July were abnormally hot and dry. Use this and other area hybrid trials when making your corn seed selections.

2006 Corn Hybrid Trial Featherstone Farm, Amelia County

Cooperators: **Producers:** Juan and Colin Whittington
Extension: Robyn Dustin, Amelia
Agribusiness: Jerry Hale and John See, Pioneer

Planting Date: April 27, 2006
Harvest Date: September 26, 2006
Tillage: NT
Previous Crop: Soybeans
Irrigated: No
Planting Population: 20,600
Starter Fertilizer: 60 lb N
Sidedress Fertilizer: 100 lb N on June 6, 2006
Herbicides: Atrazine and Lumax
Planter: Allis Chalmers 74 Series
Harvester: John Deere 9500
Check Variety: Trisler 5338 RR/YG
Soil Type: Appling

Company Name	Variety	Test Weight	% Moisture	Yield	Notes
Asgrow	754	55	17.5	85	
Asgrow	785	54	16.8	97	
Fielders Choice	77925	55	16.0	82	DOWN
Fielders Choice	7850	52	18.0	86	DOWN
Chemgrow	7323	53	15.7	98	
Chemgrow	7740	52	17.2	78	
CHECK non CB		50	17.6	89	
Mycogen	2C727	50	16.7	93	
Mycogen	2J774	52	17.6	100	
Dekalb	61-68	55	15.3	113	
Dekalb	67-23	54	17.1	103	
Doeblers	653	53	16.0	106	
Doeblers	785	52	16.8	91	
CHECK		51	17.0	96	
Augusta	5253	52	16.0	107	
Augusta	5338	52	16.9	104	
Hubner	H3487	53	15.3	114	
Hubner	H3799	53	16.2	98	DOWN
Clark	CL715	56	15.8	100	
Clark	CL617	57	18.4	84	
CHECK		50	16.9	71	
NK	N72-68	52	15.8	98	
NK	N76-M5	51	16.0	95	
Pioneer	34A16	53	15.9	99	
Pioneer	33M57	58	17.2	95	
SS	745	56	16.2	84	DOWN
SS	842	50	19.0	92	DOWN
CHECK		54	16.8	99	
TA	686-03	54	15.4	123	
TA	780-13	52	17.5	128	
Trisler	T5175	52	16.4	136	
Trisler	5337	51	18.4	131	
Vigoro	V52Y61	53	17.2	141	
Vigoro	V58YR2	53	17.5	145	
Dynagrow	57F37	52	17.0	133	
CHECK		51	18.0	123	

Discussion: At the far end of the plot, the field begins to slope and forms a bottom. In that bottom, yields increased dramatically. Therefore, the varieties in the second half of the plot should be compared with the checks at the end of the plot.

2006 Corn Hybrid Strip Trial

Westmoreland County – Mid-Season Varieties Only

Cooperators: **Producer:** F. F. Chandler, Jr., Windsor Farm
Extension: Sam Johnson, Westmoreland
Andy Beahm, Summer Intern
Industry: Rusty Green and Curtis Packett, Crop Production Services
Varieties: Mid-season
Check: Trisler 5160CBP
Planted: April 9, 2006, IH955 Cyclo set at 25,800, 30 inch rows, no-till
Soil Type: Kempsville
Fertilizer: 150-50-60
Pesticides: Lumax, 2.5 qt
Harvest Date: September 25, 2006

Company	Variety	Yield (Bu/Ac)	TW	% Moisture	Final Stand	Lodging 0-9
NK	N72G8	error	54.7	17.3	18,992	2
Doeblers	653 BWR	171	55.5	18.3	22,477	6
Campbell	6560RRBT	167	55.4	17.8	18,992	4
Dyna Gro	57F06	165	53.9	18.0	24,568	2
Check	Trisler 5160 CBP	160	55.9	18.6	21,432	4
T.A.	686-03	167	57.8	17.4	19,515	1
Trisler	5175	159	55.6	18.1	23,000	1
Vigoro	52Y61	142	54.3	17.6	14,985	1
Field.Choice	77925-PH	149	58.4	17.3	23,871	1
Check		149	56.3	18.3	19,863	2
S. States	745	149	55.7	18.9	21,954	4
Dekalb	DKC61-68	173	56.0	16.9	21,954	1
Pioneer	34A16	162	57.3	17.6	24,742	1
Mycogen	2C727	174	54.6	19.2	21,257	2
Check		169	55.9	18.2	20,038	2
Chemgro	7323RRBT	166	55.2	18.5	19,863	4
Hubner	3487	165	55.4	17.9	21,606	4
Augusta	5253 HX	154	55.2	19.2	19,166	
Asgrow	RX 754 RR2/YGRW	157	58.3	18.1	18,992	1
Check		158	56.6	17.5	20,560	2

Discussion: This is a strip trial and not replicated. This data needs to be compared with similar data across the region and with the State Performance Trials to get a more complete picture. There was a stand problem in this test. There was an unexplained variation in populations across the varieties. Please note these in relation to yield variation. Tropical Storm Ernesto also caused some lodging and some minor harvest losses. The lodging rating from 0-9 is 0 = no lodging to 9 = severe lodging.

2006 Chesapeake Corn Variety Test

Cooperators: **Producers:** Ray and Marc McPherson
Extension: Watson Lawrence, Chesapeake City
Check Variety: Pioneer 33M53,
Relative Maturity: 115 days
Average Yield: 169.2 bu/ac
Average Test Weight: 61 lb/bu
Planting Date: May 24, 2006
Harvest Date: October 2, 2006
Row Spacing: 24 inches
Population: 26,000
FERTILIZER: 500.0 lb. 7-18-36/ac preplant
10.0 gal 19-19-0 starter
50.0 gal 30% N overtop at planting
Herbicide: 14 oz Outlook/ac at planting
2.0 qt Atrazine/ac postemergence + Dynamic Adjuvanct
Tillage: Disk, ripped, field cultivator, and cultipacker
Soil Type: Acredale silt loam

Mid-Maturity Corn Variety Test (108-112 Days)

Variety	RM	% Moisture	Test Wt.	Yield @ 15.5%
Trisler 5234	109	15.8	61	175
Dekalb 68-61 RR2/GRW	111	15.5	59	162
Augusta 5153 HX	112	16.4	58	154
Hubner H3487	110	14.4	58	154
Asgrow RX 754 RR2	112	15.9	60	150
Chemgro 7323 RRBt	112	15.0	58	141
Doeblers 653	111	14.9	58	140
Southern States 745	112	15.6	58	136
Fielders Choice 7792S	112	15.1	60	136
Vigero V52-Y61	112	14.7	56	134
Pioneer 34A16	110	15.7	58	129

Full-Maturity Corn Variety Test (> 113 Days)

Variety	RM	% Moisture	Test Wt.	Yield @15.5%
Chemgro 7740 Bt	117	15.7	58	193
Hubner H3799	115	15.7	57	181
Vigero V58YR2	116	16.0	58	177
Dekalb 67-23	117	16.5	59	172
Fielders Choice 7850B	115	17.2	57	171
Doeblers 785 RR	116	16.0	57	163
Pioneer 33M57	115	16.7	61	160
Asgrow RX 785 RR2/ YGCB	113	15.2	59	157
So. States 842 RR/YGCB	118	16.4	55	154

Discussion: These varieties were selected by seed representatives for replicated testing in counties both north and south of the James River. There may be company varieties specifically recommended for Chesapeake that was not included in this test.

A check variety was planted beside each variety in the test to monitor soil differences across the test plot. The overall check variety average was used as a benchmark from which all varieties were compared and adjusted yields calculated. Pioneer 33M53 was the check variety. It yielded consistently well across the test plot, averaging 169.2 bu/ac. Its test weight was exceptional at 61 lb/bu. All varieties had noticeably higher than average test weights this year.

It is always best to look at multiple years of testing when choosing varieties.

2006 Double Crop Corn Hybrid Demonstration Plot

Cooperators: **Producer:** Lane Brooks
Extension: Keith Balderson, Essex
Agribusiness: Various Seed Company representatives

Planting Date: June 8, 2006 following barley
Soil Type: Kempsville sandy loam
Fertilization: 60 lb N/ac at planting
80 lb N/ac at sidedress
residual phosphate and potash
Herbicides: 0.5 pt 2,4-D/acre
1.0 qt atrazine/ac
1.0 qt simazine/ac
Harvest Date: November 11, 2006

Hybrid	%Moisture	Yield (Bu/ac @ 15.5%)
Mycogen 2G26YGCB	15.7	77.4
NK N58-L8	16.0	81.2
Doeblers P648 YGCB/RR	16.0	81.8
Vigoro V4860	16.0	83.6
Asgrow RX674RR2	15.6	91.2
Dekalb DK57-79 YGPL/RR2	18.0	80.6
Hubner 4345YGCB/LL	16.2	78.9
Fielders Choice 7658SPH YGCB/RR	15.6	47.3
Pioneer 35P10 YGCB/RR	16.0	92.6
Trisler T5244YGCB	16.5	92.0
Chemgro 6350	15.8	76.9
Southern States 604 YGCB/RR2	15.5	82.0
Augusta 3387	16.4	70.5
Dyna-Gro55B65 YGCB/RR	16.8	72.3
Campbell 6120	16.5	87.2
Pioneer 35P10 YGCB/RR	16.2	91.6
	Plot Average	85.8

Discussion: There is still some interest in planting double-crop corn following barley, especially in fields where deer pressure is heavy. The corn hybrids in this plot emerged quickly and got good growth. Extreme heat and dry conditions at pollination (late July and early August) really hurt yields. Fielders Choice 7658SPH YGCB/RR was decimated by deer. Producers considering double crop corn in 2007 should remember to plant YGCB hybrids. Seed treatments are probably not necessary since corn planted into warm, moist soils will germinate and emerge in less than a week.

2006 Combined Comparisons of Conventional Hybrids to their RR, Bt, and RRBt "Twins"*

* Yield average does not include the Charles City site because of missing data.

Comparison by Hybrid

Hybrid	Lancaster	Essex	Middlesex	Charles City	Ag Expo	Prince George	Southampton	Average All Sites
Pioneer 34B97	216	207	127	176	133	99	182	**161**
Pioneer 34B96 RR2	225	225	137	182	156	107	211	**177**
Pioneer 34B99 HXLL	236	223	143	186	142	112	197	**176**
Pioneer 34B94 RR2YGCB	219	208	142		141	107	187	**167**
LSD (0.05)								**7**
Augusta 5337	238	219	163	211	177	111	178	**181**
Trisler by Augusta 5337 RR	229	215	166	213	184	114	197	**184**
Trisler by Augusta 5337 YGCB	234	219	160	205	187	113	178	**182**
Trisler/Augusta 5337 RRYGCB	228	207	169	204	164	106	179	**176**
LSD (0.05)								**8**
Dekalb DKC 61-42	226	206	158	205	149	98	174	**169**
Dekalb DKC 61-44 RR	232	213	161	211	148	108	204	**178**
Dekalb DKC 61-43 YGCB	221	201	155	205	142	100	195	**169**
Dekalb DKC 61-45 RRYGCB	235	212	167	209	139	113	207	**179**
LSD (0.05)								**8**
Location Average:	*228*	*213*	*154*	*201*	*155*	*107*	*191*	***175***

Comparison by Technology

Technology	Lancaster	Essex	Middlesex	Charles City	Ag Expo	Prince George	Southampton	Average All Sites
Conventional	227	211	149	197	153	103	178	170
Roundup Ready	229	218	155	202	163	110	204	180
Bt	230	214	153	199	157	108	190	175
RRBt	227	209	159		148	109	191	174

Ag Expo RRBt Twins Trial

Cooperators: **Producer:** Jimmy Bowen, Beauregard Farms
Extension: Carl Stafford, VCE-Culpeper
Wade Thomason, Virginia Tech
Agribusiness: Various Seed Company Representatives
Variety: Various
Soil Type: Davidson loam
Planted: April 19, 2006
Seed Rate: 29,000, 1.5-2 inches deep
Equipment: Kinze 12-row
Row Width: 30 inches
Fertilization: Biosolids – 125 lb N, 250 lb P
Pesticides: 1.0 qt Simazine, 2.5 qt Atrazine, 0.083 oz Harmony GT, 4.0 oz Banvel
Harvested: September 26, 2006 w/Case 2388

Hybrid	Moisture	Yield
TRISLER 5337 RR	19.3	184
TRISLER 5337 CB	21.0	187
TRISLER 5337 RRCB	20.4	164
TRISLER 5337	20.3	177
DEKALB DKC 61-44RR	16.6	148
DEKALB DKC 61-45RRBt	17.1	139
DEKALB DKC 61-43Bt	16.6	142
DEKALB DKC 61-42	16.4	149
PIONEER 34B99HXLL	16.0	142
PIONEER 34B96RR2	16.9	156
PIONEER 34B94RRBt	16.6	141
PIONEER 34B97	16.8	133

Technology	Yield
Conventional	153
RR	163
Bt	157
RRBt	148

Trait Study –– Middlesex

Cooperators: **Producer:** Jason Benton
Extension: David Moore, Middlesex
Agribusiness: Ginny Barnes, Pioneer, A Dupont Co.
Dennis Rawley, Augusta Seed
Jim Oliver, Monsanto

Planting Date: April 11, 2006
Previous Crop: Double-crop soybeans
Soil Type: Suffolk fine sandy loam
Fertilization: 27-70-120 preplant
50-0-0 with burndown
100-0-0 sidedress
Crop Protection Roundup, Lumax, Aatrex, Simazine
Date Harvested: October 16, 2006

Hybrid	Pop. 5-31-05	M%	Yield @ 15.5%	% of Check
Check Pioneer 31G98	26,000	15.0	141	
Pioneer 34B97 (P1250)	22,500	15.0	123	87%
Check		14.7	142	
Pioneer 34B97 (P1250)	24,000	15.0	131	90%
Check			15.0	150
Pioneer 34B96 (RR) P250	24,000	15.0	138	94%
Check		15.0	145	
Pioneer 34B96 (RR) P250	26,500	15.0	135	92%
Check		14.7	147	
Pioneer 34B94 (RR/CB) P1250	25,000	14.6	135	92%
Check	26,000	15.0	148	
Pioneer 34B94 (RR/CB) P1250	25,000	15.0	148	100%
Check		15.2	148	
Pioneer 34B99 (CB) P1250	25,500	14.9	148	98%
Check		14.8	153	
Pioneer 34B99 (CB) P1250	24,500	14.9	138	92%
Check		15.2	150	
DKC 61-42 P250	26,000	15.1	157	105%
Check		25,000	15.1	150
DKC 61-42 P250	25,000	15.0	158	106%
Check			14.8	149
DKC 61-43 YG P250	24,500	14.8	153	99%
Check		15.0	159	
DKC 61-43 YG P250	26,500	14.9	156	98%
Check		14.6	158	
DKC 61-45 YG/RR P250	24,500	14.6	166	103%
Check		14.6	163	
DKC 61-45 YG/RR P250	24,500	14.6	168	104%
Check		14.7	160	
DKC 61-44 RR P250	24,500	14.7	160	101%
Check		14.8	156	
DKC 61-44 RR P250	24,500	14.8	162	100%
Check		14.9	167	
A 5337 P250	25,000	14.9	165	100%
Check	25,000	15.0	162	

Trait Study –– Middlesex (cont.)

Hybrid	Pop. 5-31-05	M%	Yield @ 15.5%	% of Check
A 5337 P250	24,000	14.9	160	97%
Check		14.9	168	
T5337 CB P250	25,000	14.6	160	95%
Check		14.5	169	
T5337 CB P250	22,000	14.7	160	94%
Check		14.9	169	
T5337 CB/RR P250	23,500	14.7	170	100%
Check		14.7	171	
T5337 CB/RR P250	24,000	14.9	168	97%
Check		15.2	176	
T5337 RR P250	23,000	15.4	167	97%
Check	25,500	15.5	170	
T5337 RR P250	24,500	15.7	165	98%
Check		15.7	167	
Average No Trait	24,420	14.9	149	
Average RR Trait	24,500	15.1	155	
Average CB Trait	24,650	14.8	152	
Average Stacked Traits:	24,410	14.7	159	

Discussion: Use of checker was not needed but did make planting the plot easier and also kept things even between all hybrids as the soils got better as we went across the field. “Stacked” genetics was, on average, 10 bushels better than no genetics. End-of-season prices of $3.00 per bushel equate to a benefit of $30.00. What is your cost for the added genetics?

This was a replicated plot over several locations. Use this and other replicated trait study information when making planting decisions for 2007.

2006 Dinwiddie/Prince George Genetic Trait Study

Cooperators: **Producer:** Tommy Harrison
Extension: Glenn F. Chappell II, Prince George
Planting Date: May 1, 2006
Plot: Stacked Gene
Population: 24,000
Soil: Emporia Fine Sandy Loam
Herbicides: 2.0 qt Bicep II + 1.0 qt Simazine
Tillage: 2X disk
Fertility: 600 lb 10-10-10 at planting
Harvest: October 3, 2006

Rep	Company	Gene	%H20	Bu/Ac
1	T 5337	RRCB	15.1	106
1	T 5337	CB	15.5	104
1	T 5337	RR	15.8	114
1	T 5337	NA	15.1	113
1	P 34B96	RR	14.4	108
1	P 34B99	CB	14.4	122
1	P 34B94	RRCB	14.7	101
1	P 34B97	NA	13.7	91
1	D 6145	RRCB	13.7	100
1	D 6142	NA	13.8	87
1	D 6143	CB	13.8	80
1	D 6144	RR	13.2	96
2	T 5337	RRCB	15.4	95
2	T 5337	CB	14.9	113
2	T 5337	RR	13.6	113
2	T 5337	NA	13.9	103
2	P 34B96	RR	13.5	111
2	P 34B99	CB	14.2	96
2	P 34B94	RRCB	13.2	111
2	P 34B97	NA	14.4	106
2	D 6145	RRCB	13.9	122
2	D 6142	NA	13.3	112
2	D 6143	CB	12.9	111
2	D 6144	RR	14.8	119
3	T 5337	RRCB	15.0	116
3	T 5337	CB	15.5	122
3	T 5337	RR	14.8	114
3	T 5337	NA	15.3	118
3	P 34B96	RR	14.2	102
3	P 34B99	CB	13.9	119
3	P 34B94	RRCB	15.0	110
3	P 34B97	NA	14.1	98
3	D 6145	RRCB	13.6	117
3	D 6142	NA	14.0	96
3	D 6143	CB	12.6	109
3	D 6144	RR	14.7	110

2006 Dinwiddie/Prince George Genetic Trait Study (cont.)

Trait Means		
Trait	**% H20**	**Bu/A**
RRCB	**14.4**	**108**
CB	**14.2**	**109**
RR	**14.3**	**110**
NA	**14.2**	**103**

Discussion: The summer through pollination was very dry, negatively impacting pollination and yield. No differences in harvest moisture were observed. All of the GMO hybrids yielded higher than the conventional hybrids.

2006 GMO Corn Plot

Cooperators:
Producer: Daniel E. Tignor
Extension: Keith Balderson, Essex County
Agribusiness: Ginny Barnes, Pioneer Hi-Bred
Jim Oliver, Monsanto
Dennis Rawley, Augusta Seed Co.

Hybrid: Various
Planting Date: April 10, 2006
Seedbed Preparation: DMI ripper plus light discing and culti-packer
Fertilization: Starter: 20 gal 15-15-0/ac + micros Bio-.0solids
Sidedress: 50.0 lb N/ac
Soil Type: Kempsville sandy loam
Herbicides: Pre-emergence: 2.0 qt Bicep/ac, 1.0 qt simazine/ac
Harvest Date: September 11, 2006

Hybrid	Seed Treatment	%Moisture	Yield (Bu/Ac @ 15.5%)
Pioneer 34B94 CBRR	Poncho 1250	19.7	208
Dekalb 61-43 CB	Poncho 250	21.5	201
Augusta 5337	Poncho 250	23.7	219
Pioneer 34B99 HX	Poncho 1250	19.9	223
Dekalb 61-42	Poncho 250	21.5	206
Trisler 5337 RR	Poncho 250	23.5	215
Pioneer 34B96 RR	Poncho 250	19.8	225
Dekalb 61-44 RR	Poncho 250	21.0	213
Trisler 5337 CBRR	Poncho 250	23.5	207
Pioneer 34B97	Poncho 250	20.2	207
Dekalb 61-45 CBRR	Poncho 250	20.6	212
Trisler 5337 CB	Poncho 250	24.0	219

Technology	%Moisture	Yield (Bu/Ac @ 15.5%)
Conventional	21.8	211
RR	21.4	218
YG	21.8	214
RRYG	21.3	209

Discussion: Interest in Bt and Roundup Ready corn continues to increase in Eastern Virginia. This plot evaluated RR, YG, and RRYG hybrids to its "standard" hybrid from three companies. European corn borer was not a problem in this field. Yields of all hybrids were excellent, and it would appear that the genetically modified traits did not affect yields in this plot.

2006 Lancaster County RRBt "Twins" Trial

Cooperators: **Producer:** Lowell Starr, Holyoke Farm
Extension: Matt Lewis, Nor/Lan
Philip Henley, Summer Intern
Agribusiness: Monsanto, Augusta, Pioneer
Variety: Various, Check = Dekalb DKC61-43YGCB P250
Soil Type: Sassafras fine sandy loam
Planted: April 11, 2006
Seed Rate: 24,300/ac
Equipment: JD MaxEmerge 6-Row Finger Pickup
Row Width: 30 inches
Fertilization: 40-0-0 starter, 30-50-70 broadcast
Pesticides: 2.5 qt Lumax, 1.5 pt Atrazine, 1.5 pt Princep, Glyphosate
Harvested: September 22, 2006

Hybrid	Final Stand	Lodging	Moisture	Yield	% Closest Check
Pioneer 34B94 RR2YGCB	22500	1	18.9	219	99%
Check	24000	1	error	error	
Pioneer 34B96 RR2	25500	2	18.2	225	102%
Check	24000	1	19.9	221	
Pioneer 34B97	23500	2	17.9	216	96%
Check	22500	1	17.7	224	
Pioneer 34B99 HXLL	23500	2	17.4	236	103%
Check	23000	1	17.7	230	
Augusta 5337	22500	4	19.6	238	109%
Check	24000	1	17.9	218	
Trisler/Augusta 5337 RRYGCB	25000	4	20.6	228	102%
Check	23000	1	18.1	223	
Trisler by Augusta 5337 YGCB	24000	4	20.4	234	102%
Check	25500	1	18.0	230	
Trisler by Augusta 5337 RR	24000	4	20.3	229	106%
Check	23000	1	17.8	216	
Dekalb DCK 61-42	21500	1	19.3	226	104%
Check	25000	1	18.0	217	
Dekalb DCK 61-44 RR	25000	1	17.4	232	106%
Check	23500	1	17.7	219	
Dekalb DCK 61-45 RRYGCB	24000	1	18.0	235	105%
Check	21500	1	17.2	223	
Dekalb DCK 61-43 YGCB	24000	1	17.7	221	99%

*Lodging on a 1-5 scale, where 1 is standing and 5 is flat.

Technology	Average Moisture	Average Yield
Conventional	18.9	227
RR	18.6	229
Bt	18.5	230
RRBt	19.2	227

Discussion: This is the second year we have looked at the yield response to adding Bt and RR traits to corn. There was little evidence of corn borer pressure in the plot, as well as very little weed pressure. In this plot, the conventional corn yielded as well as the twins that contained GMO traits. Compare this to identical trials located across Eastern VA, found elsewhere in this book.

2006 New Kent / Charles City Corn GMO Study

Cooperators: **Producer:** Evelynton Farm, Charles City
Extension: Paul Davis, VCE, New Kent/Charles City
Agribusiness: Jim Wallace and Brian Noyes, Colonial SWCD
Ginny Barnes, Pioneer
Dennis Rawley, Augusta
Jim Oliver, Monsanto

Planted: April 11, 2006
Hybrid: See below
Tillage: No-Till Previous
Crop: Double Crop Soybeans
Soil Type: Wickham, fine sandy loam
Seed Rate: 20,000 vs. 24,000 vs. 28,000 vs. 32,000
Fertilizers: Starter: 60-30-0-.5 Zn
Broadcast: 100 lb Potash
Sidedress: 100 lb 24% N
Herbicide: 3.0 pt Atrazine on April 7, 2006
3.0 pt Princep on April 7, 2006
22.0 oz. Roundup Ultra on April 7, 2006
Harvested: September 22, 2006

Variety	H_2O%	Rep 1 Bu/Ac	Rep 2 Bu/Ac	Rep 3 Bu/Ac	Rep 4 Bu/Ac	Avg. Bu/Ac
Pioneer 34B97	20.6%	172	172	172	189	176
Pioneer 34B99 YG	17.6%	181	190	193	181	186
Pioneer 34B96 RR	19.8%	202	176	185	165	182
Pioneer 34B94 RRYG	Harvest Error - No Data					
Augusta 5337	23.9%	208	222	206	206	211
Trisler 5337 CB	24.7%	184	214	206	214	205
Trisler 5337 RR	23.4%	210	201	218	221	213
Trisler 5337 CB/RR	23.6%	212	204	195	No Data	204
DK 61-42	20.2%	201	195	207	216	205
DK 61-43 YG	19.6%	197	209	200	214	205
DK 61-44 RR	19.1%	221	207	210	204	211
DK 61-45 RRYG	19.4%	203	212	195	226	209

Technology	H_20%	Yield Bu/Ac
Conventional	21.6%	197
YG or CB	20.6%	199
RR	20.8%	202
RRYG	21.5%	206 *

* The Pioneer 34B04 yield was not available for this average, thus the 206 bu/ac is misleading.

Discussion: The GMO "twins" did not significantly increase yields in this Charles City location over their standard hybrid sister. This same field in 2004 was hit hard by European corn borers (ECB) hybrids without ECB pressure this year. I expect to see more producers planting Bt hybrids just to take out the risk of a serious infestation of ECB. I have also seen other benefits of Bt hybrids with less late-season blackbird feeding damage, less stalk lodging, and less corn earworm damage.

2006 Southampton County Stacked-Genetic Corn Comparison

Cooperators: **Producers:** Clarke Fox and Cliff Fox
Extension: Wes Alexander, Southampton
Cyndi Estienne, Greensville/Emporia

Planting Date: April 11, 2006
Harvest Date: September 8, 2006
Row Spacing: 36 inches
Population: 22,500
Fertilizer: 400 lb 6-18-36
9.0 gal 11-37-0 starter
40.0 gal 30% N sidedress
Herbicide: 2.1 qt Bicep
2.0 pt Gramoxone
Tillage: Strip till
Soil Type: Emporia fine sandy loam

Hybrid	Moist%	TW	Yield
Garst 8294 YG1/IT	22.5	51.0	164
Pioneer 34B97	16.1	57.0	182
Pioneer 34B99 HX	15.4	57.0	197
Pioneer 34B96 RR	16.3	56.0	211
Pioneer 34B94 RR	17.0	57.0	187
Garst 8294 YG1/IT	21.5	53.0	203
DKC61-42	16.9	51.0	174
DKC61-43 YG	17.3	51.0	195
DKC61-44 RR	17.2	51.0	204
DKC61-45 RR/YG	16.9	53.0	207
Garst 8294 YG1/IT	22.4	51.0	182
A5337	20.3	50.0	178
A5338 CB	19.5	48.0	178
T5337RR	20.6	51.0	197
T5337RRCB	19.8	51.0	179
Garst 8294 YG1/IT	22.6	52.0	196

Discussion: Three companies' genetics were compared, including Pioneer, DeKalb, and Augusta/Trisler. Four varieties of each company were planted in four rows, 1080-foot plots, with the same parent genetics. Conventional, Roundup Ready (RR), European corn borer (ECB) protection (Bt), and RR and Bt stacked genetics made up the four varieties. Garst 8294 YG1/IT variety was planted four rows between each of the companies as a check.

European corn borer moths (*Ostrinia nubilais*) were monitored daily from May 9, 2006, to July 25, 2006, using pheromone traps. Significant moth activity took place and early ECB damage was observed.

Conventional varieties averaged 178 bu/ac at 15.5% moisture, Roundup Ready varieties averaged 204 bu/ac at 15.5% moisture, BT varieties averaged 190 bu/ac at 15% moisture, and the stacked gene varieties averaged 191 bu/ac at 15% moisture.

Corn Population Studies

Cooperator: **Producer:** Jason Benton
Extension: David Moore, Middlesex

Previous Crop: Double Crop Soybeans
Soil Type: Suffolk fine sandy loam
Planting Date: April 21, 2006
Hybrid: Pioneer 31G98
Fertilization: 27-50-100 Preplant
50-0-0 with burndown
100-0-0 sidedress
Crop Protection: Glyphosate, Lumax, Aatrex, Simazine
Harvest Date: October 21, 2006

Population	% Moisture	Yield @ 15.5%
21,000	16.0	153.8
23,500	15.7	163.3
26,000	15.7	161.8

Discussion: This information is not replicated. Jason Benton was planting at 23,500. This shows him that he is at a good population. Increasing by 2,500 seed/ac did not increase the yield. There was no population level in the study of over 26,000, which is sometimes suggested by dealers. This study was replicated over location, so use this and other Virginia Tech population study information when making planting decisions for 2007.

2006 Irrigated Corn Population Study

Cooperators: **Producer:** Cloverfield Farms, Inc.
Extension: Keith Balderson, Essex

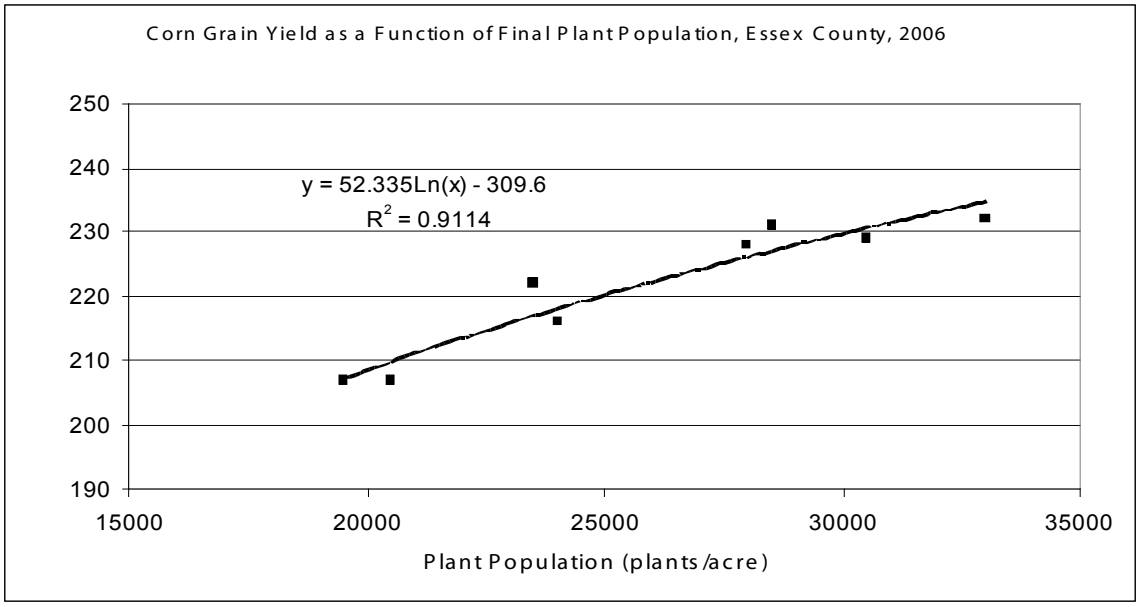
Hybrid: Dekalb 61-43CB P250
Planting Date: April 5, 2006
Seedbed Preparation: No-till ripped
Fertilization: 15.0 gal 17-17-0+S, Zn, B starter
35-0-100/ac broadcast
160 lb N/ac sidedress
Soil Type: Tetotum loam
Herbicides: Glyphosate burndown
2.4 qt Lumax/ac
1.0 qt Princep/ac
Harvest Date: September 4, 2006

Population Planting Rate	Rep 1	Actual Plant Population	% Moisture	Yield (Bu/Ac @ 15.5%)
20,000	1	20,500	22.7	207.0
24,000	1	23,500	23.3	222.0
28,000	1	28,500	23.2	231.0
32,000	1	30,500	22.9	229.0
20,000	2	19,500	23.0	207.0
24,000	2	24,000	22.9	216.0
28,000	2	28,000	22.9	228.0
32,000	2	33,000	23.2	232.0
Averages:				
20,000		20,000	22.85	207.0
24,000		23,750	23.10	219.0
28,000		28,250	23.05	229.5
32,000		31,750	23.05	230.5

Discussion: In this irrigated corn plot on a very good soil, there was a very good yield increase as populations increased from 20,000 to 24,000 to 28,000 plants per acre. There was no yield increase when populations were increased from 28,000 to 32,000 plants per acre. This plot was harvested following Tropical Storm Ernesto. Lodging increased slightly as the population increased but the lodging did not cause any significant harvest losses or slow down harvest. There was almost no lodging in the 20,000 plants per acre plots.

2006 Irrigated Corn Population Study (cont.)

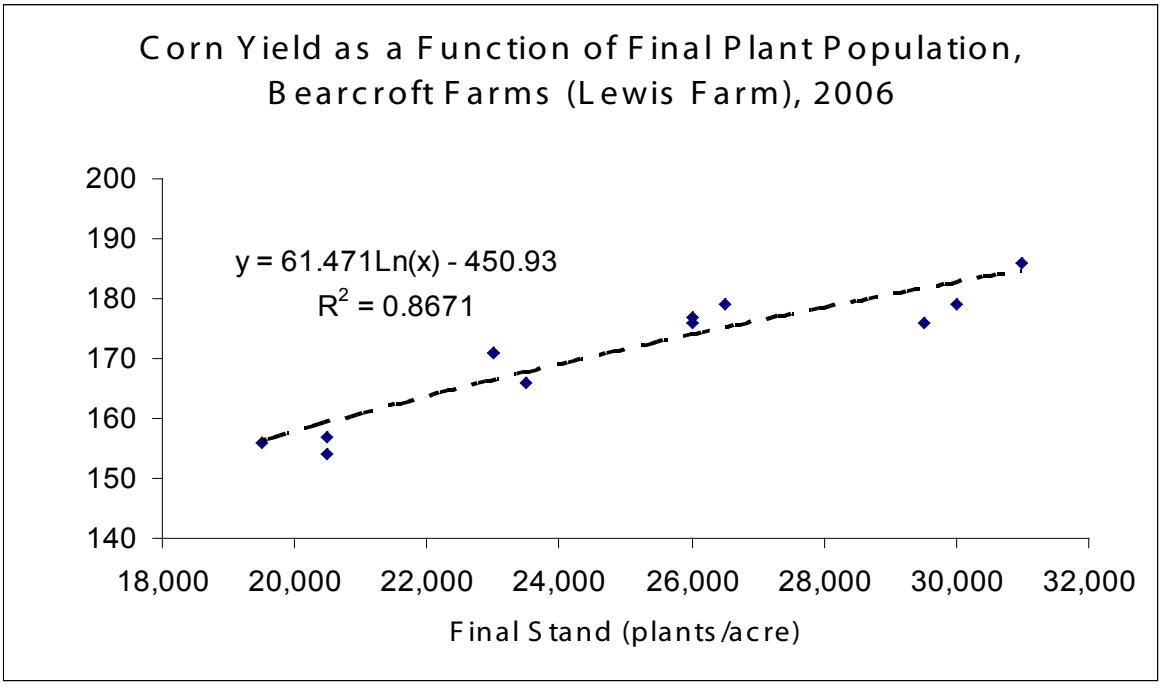
Final Population	Yield (Bu/Ac @15.5%)
20,000	207
23,500	222
28,500	231
30,500	229
19,500	207
24,000	216
28,000	228
33,000	232



Corn Population Study – Lewis Farm

Cooperators: **Producer:** Monty Swann, Bearcroft Farms
Extension: Matt Lewis, Nor/Lan
Variety: Pioneer 34A15 P250
Soil Type: Craven and Sassafrass
Planted: April 4, 2006 no-till
Seed Rate: various: 4 rates
Equipment: Deere 1760NT 8-Row MaxEmerge Plus Vacuum
Row Width: 30 inches
Fertilization: 50-0-100-10S broadcast
40-20-0 + micros starter
Pesticides: 5.5 pt Lumax, 1.0 qt Princep, 32.0 oz Roundup Ultramax, 2.0 oz Warrior
Harvested: September 21, 2006

Rep	Rate	Stand	% Moisture	Yield
1	26,000	26,500	17.6	179
1	30,000	30,000	18.0	179
1	20,000	20,500	17.6	154
1	23,000	23,500	17.7	166
2	23,000	23,000	17.7	171
2	20,000	20,500	17.7	157
2	30,000	31,000	17.9	186
2	26,000	26,000	18.0	177
3	26,000	26,000	17.8	176
3	20,000	19,500	17.8	156
3	23,000	23,000	17.7	171
3	30,000	29,500	18.2	176

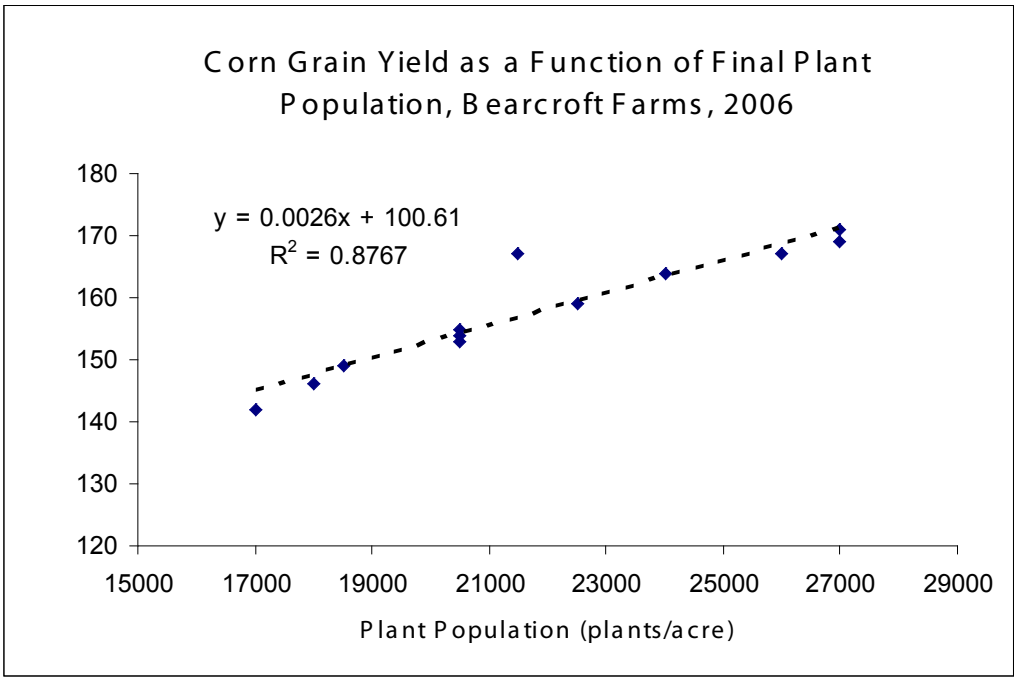


Discussion: Yields were excellent, ranging from 154 to 186 bu/ac. Yield increased significantly with plant population. We did not see a final yield "plateau" with this experiment. Next year, we plan to include significantly higher planting rates in the test to see where yields level off. Until then, please stay tuned!

Corn Population Study – Bearcroft Farms

Cooperators: **Producer:** Monte Swann, Bearcroft Farms
Extension: Matt Lewis, Nor/Lan
Variety: Pioneer 35P12, Poncho 1250
Soil Type: Sassafrass fine sandy loam
Planted: March 30, 2006 no-till
Seed Rate: various: 4 rates
Equipment: Deere 1760NT 8-Row MaxEmerge Plus Vacuum
Row Width: 30 inches
Fertilization: 50-0-100-10S broadcast
40-20-0 + micros starter
60-0-0 sidedress
Pesticides: 5.5 pt Lumax, 1.0 qt Princep, 32.0 oz Roundup Ultramax, 2.0 oz Warrior
Harvested: August 29, 2006

Rep	Seeding Rate	Final Stand	Moisture	Yield
1	26000	24,000	19.7	164
1	30000	27,000	20.1	171
1	20000	18,000	19.3	146
1	23000	20,500	19.1	153
2	23000	20,500	19.1	154
2	20000	17,000	19.3	142
2	26000	22,500	19.6	159
2	30000	26,000	19.6	167
3	30000	27,000	19.5	169
3	26000	21,500	19.5	167
3	20000	18,500	19.1	149
3	23000	20,500	19.4	155



Discussion: Corn went in the ground very early, and planting was followed by cool temperatures and heavy grub pressure that reduced final stands. Final stands ranged from 17,000 to 27,000 plants plants/ac. Yields were very good, ranging from 146 to 171 bu/ac, with an average of 158. Analysis of the data indicated that grain yield was influenced by final plant population at the 5% level of significance. Because stands were somewhat reduced early in the season, we did not observe a final yield "plateau" that would help determine optimum seeding rates for this corn hybrid at this site. However, the data does suggest that, in this case, seeding rates at or above current VCE recommendations resulted in higher yields. Moreover, higher seeding rates resulted in significantly lower infestation of fall panicum, likely because of greater shading between rows that reduced soil temperatures and available sunlight. Grain moisture was also affected by final plant population, with the highest seeding rates resulting in higher moisture levels. Many thanks go to Monte Swann for planting and harvesting this plot in such a timely manner!

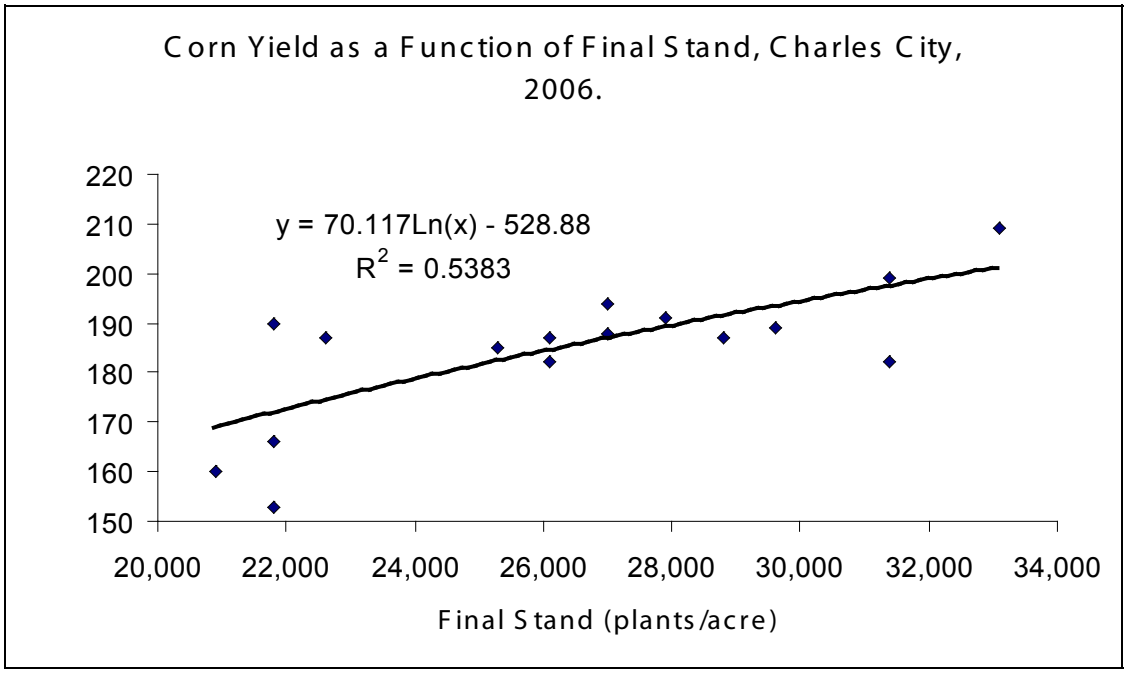
2006 Charles City Corn Population Study

Cooperators: **Producer:** Evelynton Farm, Charles City
Extension: Paul Davis, New Kent/Charles City
Agribusiness: Jim Wallace and Brian Noyes, Colonial SWCD
Planted: April 11, 2006
Hybrid: Pioneer 34B94
Tillage: No-till Previous
Crop: Double Crop Soybeans
Soil Type: Wickham, fine sandy loam
Seed Rate: 20,000 vs. 24,000 vs. 28,000 vs. 32,000
Fertilizers: 60-30-0-.5 Zn starter
100.0 lb Potash broadcast
100.0 lb 24% N sidedress
Herbicide: Atrazine 3.0 pt April 7, 2006
Princep 3.0 pt April 7, 2006
Roundup Ultra 22.0 oz April 7, 2006
Harvested: September 7, 2006

Target Population	Actual Population	Bu/Ac	% H_2O
20,000	21,800	153	20.5
20,000	21,800	190	19.2
20,000	20,900	160	21.2
20,000	21,800	166	20.0
Averages		**167**	**20.2**
24,000	26,100	182	20.3
24,000	22,600	187	19.2
24,000	26,100	187	20.2
24,000	25,300	185	18.7
Averages		**185**	**19.6**
28,000	27,900	191	19.0
28,000	27,000	194	18.6
28,000	29,600	189	19.6
28,000	27,000	188	18.7
Averages		**191**	**19.0**
32,000	31,400	182	20.0
32,000	33,100	209	19.1
32,000	28,800	187	19.3
32,000	31,400	199	18.7
Averages		**194**	**19.3**
20,000		167	20.2
24,000		185	19.6
28,000		191	19.0
32,000		194	19.3

2006 Charles City Corn Population Study (cont.)

Discussion: This population study was conducted on a very productive Wickham soil as the excellent yields show. Actual stand counts were taken in each yield check which was close to our target population. At the 20,000 population, weed pressure was significantly worse than at the three (3) higher populations, but standability was better at the lower population after Tropical Storm Ernesto. We were surprised at the high yields on the 32,000 and 28,000 because of the hot and dry conditions in June and July. On these good soils 25,000 to 28,000 population is a recommended practice, but on your more sandy soils 20,000 to 24,000 plants/ac is plenty.



Combined Comparisons of Corn Grain Yield Response to Fungicides

– Quadris Trials –

Treatment	Northumberland	Essex	Middlesex	Charles City	King & Queen	Average All Sites
Quadris – 9 ounces	174	229	199	183	150	**187 a**
Check - Untreated	172	229	201	181	149	**186 a**
Location Average:	*173*	*229*	*200*	*182*	*150*	*187*

– Headline Trials –

Treatment	Northumberland - Swann	Northumberland - Harris	Westmoreland	Average All Sites
Headline	**190**	**178**	**167**	**178 a**
Untreated	**183**	**172**	**172**	**176 a**
Location Average:	*187*	*175*	*170*	*177*

Treatments averages across sites followed by the same letter are not statistically different at the 5% level.

Aerial Corn Fungicide Application

Cooperators: **Producer:** Ronnie Russell, Corbin Hall Farm
Extension: David Moore, Middlesex
Agribusiness: Ralph Hall, Syngenta
Matt Crabbe, Crabbe Aviation

Previous Crop: Soybeans
Soil Type: Slagle silt loam
Plant Date: April 5, 2006
Corn Hybrid: Pioneer 34B94
Fertilization: 170-48-96 (2 applications)
Crop Protection: Roundup burndown
Bicep II Magnum
Harvest Date: September 18, 2006

Treatment	% Moisture	Test Wt.	Yield @ 15.5%
Treated 1	23.7	55	202
Untreated 1	21.8	56	205
Treated 2	22.6	56	196
Untreated 2	21.2	55	197
Treated 3	22.5	55	199
Untreated 3	21.5	55	201
Average Treated	22.9		199
Average Untreated	21.5		201

Discussion: This plot was one of several like it around the Northern Neck and Middle Peninsula. Aerial application of Quadris at the 9.0-oz/ac rate was done in replicated strips in the field. No apparent differences appeared in the field. Weather conditions were normal for the most part. Weather was good at pollination time. Field was irrigated. No yield differences in plot. Use this and other Virginia Tech replicated corn fungicide plotwork results to help make production decisions for 2007.

Aerial Fungicide Evaluation King and Queen

Cooperators: **Producer:** Ray Rilee and Walter E. Fuerer
Extension: David Moore, Middlesex
Agribusiness: Ralph Hall, Syngenta
Matt Crabbe, Crabbe Aviation

Previous Crop: Soybean
Soil Type: Emporia sandy loam
Plant Date: April 15, 2006
Hybrid: Pioneer 34A15
Fertilization: 185-70-150-21S -2Zn -.3B
Crop Protection: Bicep, Simazine, Aatrex, 2,4-D, Baythroid
Harvest Date: September 22, 2006

Treatment	% Moisture	Test Wt.	Yield @ 15.5%
Treated 1	15.3	57	145
Non Treated 1	15.1	57	144
Treated 2	15.1	57	153
Non Treated 2	15.1	57	153
Treated 3	15.2	57	153
Non Treated 3	15.0	59	151
Average Treated:			150
Average Untreated:			149

Discussion: There were several of these plots around the Northern Neck/Middle Peninsula this year. Quadris was applied by airplane on July 1 at the 9-oz/ac rate. Please check overall summary of this work printed elsewhere in this publication. This field was affected by Tropical Depression Ernesto. There were no visible differences in the treated or untreated replications and no significant differences in yields.

Use this and other replicated corn fungicide trial information when making corn production decisions for 2007.

2006 Irrigated Corn Fungicide Study

Cooperators: **Producer:** Cloverfield Farms, Inc.
Extension: Keith Balderson, Essex
Agribusiness: Matt Crabbe, Crabbe Aviation

Hybrid: Dekalb 61-43 CB P250
Planting Date: April 5, 2006
Seedbed Preparation: No-till ripped
Fertilization: 15.0 gal 17-17-0+S, Zn, B/ac starter
35-0-100 broadcast
160 lb N sidedress
Soil Type: Tetotum loam
Herbicides: Glyphosate burndown
2.4 qt Lumax/ac
1.0 qt Princep/ac
Harvest Date: September 4, 2006

Treatment	Rep 1	% Moisture	Yield (Bu/Ac @ 15.5%)
Quadris	1	20.9	215
Check	1	21.3	202
Quadris	2	22.3	235
Check	2	22.4	229
Quadris	3	22.6	241
Check	3	22.8	243
Quadris	4	21.8	226
Check	4	21.3	241
Averages:			
Quadris		21.9	229
Check		21.9	229

Discussion: There is currently interest in applying fungicides to corn to control foliar diseases and increase corn yields. Quadris was applied by air at silking. This field has typically been in the traditional corn, wheat, double crop soybean rotation. Overall disease pressure was relatively low. There was a fair amount of variability in the yields, but across four replications there was no difference in yield between the treated and untreated plots.

Aerially-Applied Quadris Study – Harris Farms

Cooperators: **Producer:** Keith and Garnett Harris
Extension: Matt Lewis, Nor/Lan
Philip Henley, Summer Intern
Agribusiness: Matt Crabbe, Crabbe Aviation
Ralph Hall, Syngenta
Variety: Vigoro 5110
Soil Type: Matapeake silt loam
Planted: April 8, 2006
Seed Rate: 24,500
Equipment: Kinze 8-row finger-pickup
Row Width: 30 inches
Fertilization: 150-80-80
Pesticides: Atrazine, Princep, Bicep, Warrior
Harvested: September 7, 2006

Rep	Treatment	Moisture	Yield
1	Quadris	16.2	174
1	Check	16.0	173
2	Quadris	16.2	173
2	Check	16.1	171
	AVERAGE QUADRIS:	**16.2**	**174**
	AVERAGE CHECK:	**16.1**	**172**
	LSD (0.05)	**0.6**	**6.4**
	CV	**0.3**	**0.3**

Discussion: This was part of a replicated set of plots to determine corn yield response to Quadris fungicide. An application of 9 oz of Quadris was made during silking/tasseling on July 1. Very little disease pressure was evident. While treated corn yielded 2 bushels higher on average, this was not statistically significant. Look at this and other fungicide trial results when selecting an IPM program for your corn fields.

2006 Charles City Corn Late-Season Fungicide Plot

Cooperators: **Producer:** Evelynton Farm, Charles City
Extension: Paul Davis, New Kent/Charles City
Agribusiness: Matt Crabbe, Aerial Applicator

Planted: April 10, 2006
Hybrid: Pioneer 34A16
Tillage: No-Till Previous
Crop: Double Crop Soybeans
Soil Type: Wickham, fine sandy loam
Seed Rate: 25,000
Fertilizers: 60-30-0-.5 Zn starter:
100 lb Potash broadcast:
100 lb 24% N sidedress:
Herbicide: Atrazine 3.0 pt April 7, 2006
Princep 3.0 pt April 7, 2006
Roundup Ultra 22 oz. April 7, 2006
Fungicide: Quadris flown on at silking
Harvested: September 8, 2006

Reps	Bu/Ac	% H_2O
Quadris 1	183	19.4
Control 1	182	19.1
Quadris 2	183	19.2
Control 2	181	19.4
Quadris 3	183	19.4
Control 3	181	19.4
Averages		
Fungicide	183	19.3
Control	181	19.3

Discussion: There was only a 2-bu/ac advantage to applying late-season fungicides to the early-maturity Pioneer 34A16 hybrid. A full-season hybrid may have shown a yield difference. More work needs to be done to see if this practice will pay.

Survey of *Bacillius Thuringensis* (Bt) Effect on Corn Earworm Infestation

While conducting the 2006 Corn Earworm Survey, it was observed that roughly 50% of corn ears had a corn earworm (CEW) present in most corn fields in Chesapeake. This was indicative of the population levels in this area for this year. However, it was also observed that some adjacent corn fields on farms had a much lower percentage of CEW present. We know that some corn varieties are more resistant to corn earworm infestation due to tight protective shuck cover. But checking with farmers revealed these extremely low CEW infested fields were all planted in varieties with some form of the *Bacillus thuringensis* (Bt) gene. This prompted me to survey farms with adjacent fields of non-Bt and Bt corn varieties to see what differences in CEW infestation levels could be observed.

Farm	Variety	% Ears With Worm	% Ears Without Worm
Slabaugh/Fentress	Augusta 5337	50	50
	Augusta 5337 Bt	**32**	**68**
Slabaugh/Whitmore	Trisler 5337	36	64
	Trisler 5257 Bt	**8**	**92**
Brickhouse	Dekalb 6972 RR	72	28
	Dekalb 6971 RR Bt	**24**	**76**
Stonecypher	Pioneer 33M53	30	70
	Dekalb 6019 Bt	**0**	**100**
Nicholas	Garst 8451 RR	56	44
	Dekalb C61-43 YGCB	**8**	**92**
McPherson	Pioneer 33M53	20	80
	Garst 8377 Bt	**2**	**98**

The above table shows farms with adjacent fields of non-Bt varieties and **Bt-varieties** (bold) had a constant difference in infestation of ears with CEW. In every case the **Bt varieties** had *fewer ears infested* with CEW. Conversely, **Bt varieties** had *more ears without* CEW.

The development and release of Bt genetically modified corn is one of the most significant accomplishments in pest management of the past half-century. Bt corn is highly toxic to European Corn Borer (ECB) larvae and its release was primarily intended to control this pest. ECB is a pest that can cause significant losses in corn if present and uncontrolled. Entire stalks and ears can be lost if ECB tunnel into stalks and cause ear drop or lodging. There are a number of strains of Bt proteins, but only a handful have been incorporated into the current lines of commercial corn hybrids. Various Bt strains are expressed at different concentrations in different parts of the corn plant. Most strains are expressed significantly in the green plant tissue (leaves and stalk) where ECB tunnel. Therefore ECB are effectively controlled.

CEW however are not always as effectively controlled because the ears and silks do not all express the Bt gene as consistently. Combine this with the fact that CEW generally do not cause the same level of losses as ECB because they damage only a portion of the corn ear (tip) before falling to the ground to pupate. The result is CEW are not a primary target of the Bt technology.

However, more acres of Bt corn are being planted in this area. Bt corn is considered an insurance measure for ECB protection and should be planted for that purpose. No research has shown Bt corn to enhance yields aside from controlling ECB.

The question might be asked whether Bt corn could reduce CEW pressure on other crops like soybeans. Several factors should be taken into consideration. One fact is a refuge requirement for growing Bt corn requires at least 20% of corn be non-Bt to ensure resistance development does not build. *This is an important standard that every farmer must follow to ensure Bt technology remains effective.* That refuge would ensure some CEW pressure for secondary crops even if the entire area planted Bt corn at 80% which is legally permitted. Also, CEW are very good fliers and can be picked up by wind currents and travel great distances, even if *your farm* is predominately Bt corn. Therefore, planting Bt corn to reduce CEW pressure for soybeans is probably not practical or highly effective, unless Bt corn acres reaches much higher levels than currently grown on a large area basis.

2006 GreenSeeker Corn Studies Summary
Growth Stage 30 Nitrogen Treatments Avg Bu/Ac

Evelynton Location

Cooperators: **Producer:** Archer and Tim Ruffin**,** Evelynton Farm, Charles City
Extension: Paul Davis, VCE, New Kent/Charles City
Hybrid: Pioneer 34K78
Soil Type: Wickham, fine sandy loam
Fertilizer: **Broadcast:** 100 lbs Potash
Starter: 60-30-0-.5ZN
Sidedress: Varied (see yield result table) on 6/12/06
Harvested: September 11, 2006

Hill's Location

Cooperators: **Producer:** Wayne and Boogie Davis, L.C. Davis Sons Farm, New Kent
Extension: Paul Davis, VCE, New Kent/Charles City
Hybrid: Trisler 5160
Soil Type: Tetotum, fine sandy loam
Fertilizer: **Broadcast:** 60-40-80
Sidedress: Varied (see yield result table) on 6/8/06
Harvested: September 11, 2006

	Standard Treatment						**Avg**	**Lbs/Ac**	**Avg**
Harvested	**Location**	**Rep 1**	**Rep 2**	**Rep 3**	**Rep 4**	**Rep 5**	**bu/ac**	**Sidedress N**	**% of H20**
9/11/06	Evelynton	186	166	183	174	170	176	100	18.7
9/16/06	Hill's	160	152	170	169	161	162	100	19.9
					Averages		**169**	**100**	**19.3**

	GreenSeeker Treatment						**Avg**	**Lbs/Ac**	**Avg**
Harvested	**Location**	**Rep 1**	**Rep 2**	**Rep 3**	**Rep 4**	**Rep 5**	**bu/ac**	**Sidedress N**	**% of H_20**
9/11/06	Evelynton	186	177	170	188	198	184	92	18.7
9/16/06	Hill's	150	154	173	166		161	79	20.0
					Averages		**172**	**86**	**19.4**

Discussion: Greenseeker is an optical sensor mounted on the spray boom that reads chlorophyll levels in the plant as well as leaf area. An average rate of nitrogen is calculated for the entire boom width, 60 feet in this study, and applied. Given variable plant chlorophyll levels and biomass cover on the soil's surface, nitrogen rate has the potential to change every 25-30 feet. In these two locations the GreenSeeker plots averaged 172 bu with 85 lb N/ac while the standard treatment of 100 lb N/ac yielded 169 bu. This study showed that the GreenSeeker technology can work on field scale spray equipment, improve Nitrogen Use Efficiency (85 lb N vs. 100 lb N) and maintain corn yields.

Headline Fungicide Test on Corn – Lawfield Farm – Westmoreland County

Cooperators: **Producer:** F.F. Chandler, Jr.
Extension: Sam Johnson, Westmoreland
Andrew Beahm, Summer Intern
Industry: Sam Alexander, BASF Corp.
Rusty Green and Curtis Packett, Crop Production Services

Variety: Pioneer 34A16
Planted: April 20, 2006, IH 955 Cyclo, 30 in. rows, set at 25,800, no-till
Soil Type: Kempsville
Fertilizer: 130-50-60
Herbicides: Lumax, 2.5 qt, Princep, 1.0 pt.
Harvest date: October 5, 2006
Population: 25,996
Fungicide treatment: 9 oz. Headline versus no treatment on checks, sprayed with water just prior to tasseling, June 29, 2006

	Test Wt	Moisture	Yield/Ac
1. Headline	58.7	17.3	156
2. Check	59.2	16.6	175
3. Headline	58.9	16.7	169
4. Check	58.9	16.3	167
5. Headline	59.4	16.4	172
6. Check	58.9	16.5	184
7. Headline	58.2	16.5	172
8. Check	58.8	16.2	162
Headline Avg.	58.8		167
Check Avg.	58.9		172

Discussion: Good stand and almost zero lodging in the plots even with high winds and rain from T.S. Ernesto. Did not run statistics but there is probably no significant difference in the treatments.

Aerially-Applied Fungicide Study – Bearcroft Farms

Cooperators: **Producer:** Monte Swann, Bearcroft Farms
Extension: Matt Lewis, Nor/Lan
Philip Henley, Summer Intern
Variety: Dekalb DKC 61-42
Soil Type: Mattapex silt loam
Planted: April 12, 2006 no-till
Seed Rate: 26,000
Equipment: Deere 1760NT 8-Row MaxEmerge Plus Vacuum
Row Width: 30 inches
Fertilization: 50-0-100-10S Broadcast, 40-20-0 + micros Starter, 60-0-0 Sidedress
Pesticides: 5.5 pt Lumax, 1.0 qt Princep, 32.0 oz Roundup Ultramax, 2.0 oz Warrior
Harvested: October 2, 2006

Rep	Treatment	% Moisture	Bu/Ac Yield
1	Headline	16.0	184
1	Check	16.5	186
2	Headline	16.0	185
2	Check	16.0	194
3	Headline	error	error
3	Check	16.0	181
4	Headline	16.0	199
4	Check	15.7	181
5	Headline	15.5	191
5	Check	15.5	174
	AVERAGE HEADLINE:	**15.9**	**190**
	AVERAGE CHECK:	**15.9**	**183**
	LSD (0.05)	**0.51**	**20**
	CV	**1.5**	**5**

Discussion: Six ounces of Headline fungicide was applied by airplane on July 1 during the silking/tasseling growth stage. Overall, disease pressure was minimal. A statistically-significant 5-bushel increase to Headline was observed. Refer to this and other area fungicide trials when deciding on an IPM plan for your corn fields.

Aerially-Applied Headline Study – Harris Farms

Cooperators: **Producer:** Keith and Garnett Harris
Extension: Matt Lewis, Nor/Lan
Philip Henley, Summer Intern
Agribusiness: Tom Griffie, UAP
Matt Crabbe, Crabbe Aviation
Sam Alexander, BASF
Variety: 6 Rows Trisler/Augusta 5244Bt, 2 Rows Augusta 3387
Soil Type: Sassafras fine sandy loam
Planted: April1, 2006 no-till
Seed Rate: 25,500
Equipment: Kinze 8-row finger-pickup
Row Width: 30 inches
Fertilization: 3.5 ton Poultry Litter, 60-0-0 Sidedress
Pesticides: Bicep, Princep, Glypohosate
Harvested: September 8, 2006

Rep	Treatment	% Moisture	Bu/Ac Yield
1	Headline/Micros	23.9	181
1	Check	22.9	175
2	Headline/Micros	24.1	179
2	Check	24.1	173
3	Headline/Micros	19.9	174
3	Check	19.6	169
	AVERAGE HEADLINE:	**22.6**	**178**
	AVERAGE CHECK:	**22.2**	**172**
	LSD (0.05)	**1.3**	**1.4**
	CV	**1.6**	**0.2**

Discussion: There has been recent interest in using strobilurin fungicides to protect corn yields on highly productive soils. This plot was designed to help determine need for fungicide applications. Six ounces of Headline were applied via airplane in a carrier of water and micronutrients (Foliar Feed) on July 1, 2006. Corn was silking and tasseling at time of application. Treated corn yielded 6 bushels higher than untreated in the absence of significant disease pressure. Look at this and other fungicide trials when deciding whether to apply fungicides in your fields.

Avitec Bird Repellent Plot

Cooperators: **Producer:** Haynie Farms, LLC
Extension: Matt Lewis, Nor/Lan
Wade Thomason, Grains Specialist
Philip Henley, Summer Intern
Variety: Pioneer 34K77 Poncho 250
Soil Type: Matapeake, Mattapex, Dragston
Planted: May 4, 2006 – no-till, ripped
Seed Rate: 24,000/ac, 1.5 inches deep
Equipment: Deere MaxEmerge2 7200 12-row vacuum planter
Row Width: 30 inches
Fertilization: 12 gal 10-34-0 starter, 150 lbs potash broadcast
Pesticides: Bicep, Atrazine, Princep, Glyphosate

Treatment	Stand (plants/ac)
Treated 1	21000
Treated 2	16000
Treated 3	22000
Treated 4	10000
Treated 5	16000
Treated 6	11000
Treated 7	17000
Treated 8	8000
Treated 9	18000
Treated 10	14000
Average Treated:	**15300**
Untreated 1	23000
Untreated 2	26000
Untreated 3	22000
Untreated 4	22000
Untreated 5	25000
Untreated 6	20000
Untreated 7	24000
Untreated 8	20000
Untreated 9	22000
Untreated 10	19000
Average Untreated:	**22300**

Discussion: Seed depredation by crows has been an increasing problem over the last few years. This plot was designed to determine if Avitec, a seed-applied, hopper-box bird repellant manufactured by Arkion, could reduce feeding. Seed in half the planter was treated, and the other half was left untreated to create 5 12-row strips of both treated and untreated seed in the field. Crows feeding was very light across the entire field. Stand counts were taken in each strip on May 23. In this plot, the seed treatment reduced germination by about a third. Because of this, we determined it was not necessary to record yield of the plot. Similar results were observed in a plot near New Kent. Based on this data, Avitec would not be recommended due to significantly reduced germination.

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