

# **Virginia Cooperative Extension**

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# 2010 Virginia On-Farm Corn Test Plots



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

# 2010 Virginia On-Farm Corn Test Plots

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The research and demonstration plots discussed in this publication are a cooperative effort by nine Virginia Cooperative Extension Agents and Specialists, numerous producers, local soil and water conservation districts, 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 nineteenth year of this multi-county cooperative project. Further work is planned for 2011.

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 extension office for her efforts in compiling and summarizing hybrid performance data.

Disclaimer: Commercial products are named in this publication for informational purposes only. Virginia Cooperative Extension does not endorse these products and does not intend discrimination against other products which also may be suitable.

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# **General Summary**

These replicated studies provide information that can be used by Virginia corn growers to make better management decisions on their farms. The drought of 2010 limited our ability to learn more about top-end performance of some hybrids, kept us from learning more about thresholds for slug control, and even caused us to abandon a number of plots. However, given the severity of the widespread drought, we were fortunate to gather some very good data that should be of use to Virginia's corn industry. Refer to individual plots for discussion of results.

Corn hybrid selection is becoming increasingly challenging. 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, a severe drought at most locations gave us a look at stress tolerance of specific hybrids, while a few locations received timely moisture and gave us a look at top-end performance. Unfortunately, four plots were abandoned due to extreme drought.

Fertilizer prices and BMP's have continued farmers' interest in maximizing fertilizer use efficiency. This was the fourth year evaluating dribbled vs. injected sidedress nitrogen. Where moisture is adequate for good yields, injecting the sidedress nitrogen has led to optimum yields with less fertilizer. Whether this practice is economically feasible depends on the purchase price of the injector, maintenance costs, life of the equipment, and fertilizer prices. Currently, fertilizer prices are on the rise which may result in sidedress injection becoming economically superior to dribble applications.

Many growers have been seeing yield losses in recent years due to nematodes. Options to alleviate this problem are very limited. In a fourth year of looking for answers, Avicta® was evaluated as a possible solution, as well as a new product, Votivo®. In six studies, there was no advantage to the Avicta® treatments. Two studies evaluating Votivo® showed higher yields to the treatment, but only one was statistically significant.

Slugs continue to be a serious pest of seedling corn – both in Eastern VA and the Valley. However a warm, dry spring kept problems to a minimum in 2010. Ten sites in Eastern VA where slugs have been problematic in years past were monitored for slug activity in 2010. Due to the weather, none of those sites showed significant slug activity and therefore field trials were not installed. One slug complaint was received in Northumberland County where early slug activity was found to be moderate, and a trial was installed. Results showed that Deadline<sup>®</sup> molluscicide was effective in killing slugs, but feeding activity was not significant enough to cause significant yield reductions to the corn. So far results have shown that feeding must be severe before treatment makes economic sense. Adoption of this technology by growers, even when feeding is severe, remains an issue, as does an accurate economic threshold for use of the pesticide. Further work on slugs is planned for 2011.

# 2010 Virginia On-Farm Corn Hybrid Plots: Yield Summary by Site & Maturity

# Early Maturity: 107 days or less RMA

		W <sub>estmoreland</sub> ( ,	King & Queen (	King & Queen (Hz.	AVERAGE
Seed Brand Name:	<u>Hybrid</u>	3	Ę.	Ķ	4
Augusta Seed Corn	A 54-57	84		114	87 <sup>†</sup>
DeKalb	DKC 52-59	94	62	123	93
Doeblers PA Hybrids Inc.	RPM633HXR	88	46	116	83
Dyna-Gro	56R29	83	<b>4</b> 6	100	76
Hubner Seed	6110	90	<b>7</b> 1	128	96
Mid-Atlantic Seeds	MA8109VT3P	85	64	124	91
Mycogen Seed	2K592	8 <b>7</b>	64	117	89
Pioneer Hi Bred Intl	35F40	90	<b>7</b> 3	12 <b>7</b>	97
Southern States	SS538VT3	91	77	128	98
Supreme EX by Seed Consultants	SCS10HQ70	85	64	118	89
T.A. Seeds	TA525-13V	<b>7</b> 6		106	80 <sup>‡</sup>

<sup>†</sup> Data from all testing locations was unavailable for this hybrid. To assign average yield, yield was estimated for this hybrid at missing site(s) based on performance relative to the mean at the other testing locations.

<sup>‡</sup> Yield of this hybrid at King & Queen (Carlton) was adjusted based on % of nearest check method due to being planted on edge of field.

# Mid Maturity: 108 to 112 days RMA

		$W_{estmorel_{2-}}$	AB Expo)	4	King & Queer,	<sup>1</sup> enley)			
		,	D(lb	(Ber				,a	i
		nore	rent	$^{^{'}}$	s Ou	ddie		peak	A GE
Seed Brand Name:	Hybrid	$W_{est_{\prime}}$	New Kent	Middlesex (Bent	King 8	Dinwiddie	VSU	Chesapeake	AVERAGE
Augusta Seed Corn	A 54-61	9 <b>7</b>	84	<b>7</b> 0	122	120	142	190	118
DeKalb	DKC 62-54	88	134	68	12 <b>7</b>	<b>11</b> 9	160	160	122
Doeblers PA Hybrids Inc.	679GRQ	8 <b>7</b>	110	66	110	<b>11</b> 9	<b>14</b> 9	165	115
Dyna-Gro	57V40	8 <b>7</b>	89	56	118	<b>11</b> 9		190	<b>114</b> <sup>†</sup>
Hubner Seed	5505	10 <b>7</b>	106	61	131	153	155	160	125
Mid-Atlantic Seeds	MA8143VT3P	90	92	51	<b>12</b> 9	158	136	183	120
Mycogen Seed	2E696	80	103	52	110	114	131	156	106
NK	N 68B-3000 GT	<b>8</b> 9	<b>7</b> 1	<b>7</b> 5	122	12 <b>7</b>	154	169	115
Pioneer Hi Bred Intl	P1184HR	86	89	90	132	148			127 <sup>†</sup>
Seed Consultants	SC11AGT30	96	136	61	<b>11</b> 9	<b>14</b> 9	163	181	129
Southern States	SS 684 VT3	9 <b>7</b>	106	63	126	133	160	183	124
Supreme EX by Seed Consultants	SCS11HQ38	<b>7</b> 3	95	51	122	125	131	18 <b>7</b>	112
T.A. Seeds	TA700-11	93		65	125	118	13 <b>7</b>	198	120 <sup>†</sup>

<sup>†</sup> Data from all testing locations was unavailable for this hybrid. To assign average yield, yield was estimated for this hybrid at missing site(s) based on performance relative to the mean at the other testing locations.

# Full Maturity: 113 days or more RMA

		Westmoreland (.	Middlesex (Grovi	e esham)		עו
Seed Brand Name:	<u>Hybrid</u>	$W_{estmo_{O}}$	$M_i$ ddles $\epsilon$	Dinwiddie	VSU	AVERA GE
Augusta Seed Corn	A 68-67	95	92	138	151	119
DeKalb	DKC 63-84	92	128	139	<b>11</b> 9	119
Doeblers PA Hybrids Inc.	RPM725HRQ	81	84	131	130	107
Dyna-Gro	57V59	88	129	150	<b>14</b> 9	129
Hubner Seed	5909	99	88	139	143	117
Mid-Atlantic Seeds	MA5160GT	88	69	146	120	106
Mycogen Seed	2V732	94	<b>7</b> 3	144		112 <sup>†</sup>
NK	N73V-3000GT	96	61	145	<b>14</b> 9	113
Pioneer Hi Bred Intl	P1456HR	77	20	141	<b>14</b> 9	97
Southern States	SS 749VT3	<b>7</b> 3	51	142	131	99
Supreme EX by Seed Consultants	SCS11HR69	90	59	122		97 <sup>†</sup>
T.A. Seeds	TA717-20	89	90	139		115 <sup>†</sup>

<sup>†</sup> Data from all testing locations was unavailable for this hybrid. To assign average yield, yield was estimated for this hybrid at missing site(s) based on performance relative to the mean at the other testing locations.

# 2010 Chesapeake Corn Variety Comparison

**Cooperators:** Producer: Russell Temple

**Extension:** Watson Lawrence, Extension Agent

**Agribusiness:** Participating Seed Suppliers

**Previous Crop:** Soybeans

**Soil Type:** Dragston Fine Sandy Loam

Planting Date: April 30, 2010 Row Width: 24 inches

**Population:** Approximately (26,500 seeds/acre) **Fertilizer:** Broadcast: 666 lbs./acre 24-12-12

**Crop Protection:** Stout 0.75 oz/acre + Clarity 8 oz/acre + Crop-Oil Concentrate (Post-emergence Herbicides)

Corn Maturity: Mid-season (108-112 Relative Maturity)
Check Hybrid: Pioneer 1184 - RR2/LL/Herculex Xtra

Harvest Date: October 7, 2010

Hybrid	Traits	%	Test	Yield	% of Check	Rank
		Moisture	Wt.			
Mid-Atlantic 8143	Yieldgard VT Triple	21.7	59	182.5	102.3%	6
Check	RR2/LL/Herculex Xtra	17.8	60	181.8		
TA Seeds 656	Agrisure CB/LL	22.3	56	198.3	111.1%	1
Check	cc	17.9	60	188.8		
Northrup King N-68B	Agrisure 3000	19.5	55	168.5	94.4%	8
Check	cc	18.6	60	195.1		
Mycogen 2E696	Yieldgard VT Triple, RR	17.8	58	155.7	87.2%	12
Check		17.3	59	169.8		
Dyna Gro 57V40	Yieldgard VT Triple	18.6	57	189.7	106.3%	3
Check	cc	18.1	61	194.0		
Seed Consultants 11AGT30	Agrisure GT/CB/LL	20.5	55	181.2	101.5%	7
Check		17.0	61	190.2		
Southern States 684	Yieldgard VT Triple	19.3	57	182.5	102.2%	5
Check		18.4	61	174.9		
Augusta 54-61	Agrisure GT/CB/LL	20.1	55	190.3	106.6%	2
Check	cc	17.7	61	191.2		
Doeblers 679	Agrisure 3000	17.3	56	165.4	92.7%	9
Check	cc	18.1	58	173.6		
Dekalb 62-54	Yieldgard VT Triple	17.4	59	160.0	89.7%	10
Check	cc	17.4	59	161.6		
Supreme EX SCS11 HQ38	RR/Herculex Xtra	19.8	60	186.8	104.7%	4
Check	cc	17.9	60	158.9		
Hubner 5505	Yieldgard VT Triple	17.6	58	159.9	89.6%	11
Check	cc	18.4	61	183.9		
CHECK AVERAGE:		17.8	60	178.4	100%	

**Discussion:** This test reflected very good yields as was the case in much of Chesapeake and Virginia Beach this year. We were very fortunate with rainfall which was the most limiting factor in Virginia in 2010. Yields were expressed as a percent of check variety which was used as a benchmark to average soil conditions across the plot. The check variety Pioneer 1184 HR averaged 178.4 bu. /acre and performed well across the entire plot.

### Virginia State University Mid & Late Corn Hybrid Comparison

**Cooperators:** Ruddy Grammar and Mack West, VSU-Randolph Farm

Glenn F. Chappell, II, Virginia State University

**Previous Crop:** Soybeans

**Soil Type:** Norfolk & Tetotum loam

Planting Date: April 7, 2010

Fertilizer: Broadcast: 30-60-120, Sidedress: 160-0-0

**Crop Protection:** 2qt Bicep II Mag. + 1qt Simizine + 1qt Gramoxone Plus, 10 oz. Banvel – April 29,2010

8lbs. Counter 15G

Check Hybrid: Hubner 5655
Harvest Date: September 3, 2010
Harvest Equipment: John Deere 9560 STS

Brand	Hybrid	Maturity	Population	% Moisture	Yield
Check	Н5655	113	29,000	*	
Pioneer Hi Bred Intl	P1184HR	111	29,000		
Dyna-Gro	57V40	111	29,000		
Augusta Seed Corn	A 54-61	111	29,000	13.5	141.9
T.A. Seeds	TA700-11	111	29,000	14.2	136.5
NK	N68B-3000GT	110	29,000	12.6	153.9
Hubner Seed	5505	111	29,000	12.6	155.4
Doeblers PA Hybrids Inc.	679GRQ	110	29,000	12.2	149.1
Southern States	SS 684 VT3	111	29,000	12.3	160.3
Mid-Atlantic Seeds	MA8143VT3P	112	29,000	14.4	135.8
DeKalb	DKC 62-54	112	29,000	12.1	159.9
Supreme EX Seed Con.	SCS11HQ38	112	29,000	14	131.1
Mycogen Seed	2E696	110	29,000	13.6	130.9
Seed Consultants	SC11AGT30	112	29,000	13.8	162.9
Check	Н5655	113	29,000	11.6	158.8
Pioneer Hi Bred Intl	P1456HR	114	29,000	11.9	148.8
Dyna-Gro	57V59	114	29,000	13.7	148.5
Augusta Seed Corn	A 68-67	117	29,000	14.3	150.9
T.A. Seeds	TA790-11	118	29,000	14.1	153.5
NK	N73V-3000GT	116	29,000	12.1	148.9
Hubner Seed	5909	115	29,000	13.9	143.1
Doeblers PA Hybrids Inc.	RPM725HRQ	114	29,000	13.2	130.0
Southern States	SS749 VT Triple Pro	115	29,000	13.2	131.2
Mid-Atlantic Seeds	MA5160GT	115	29,000	13.1	119.7
DeKalb	DKC 63-84	113	29,000	12.1	119.1
Supreme EX Seed Con.	SCS11HR69	116	29,000		
Mycogen Seed	2V732	113	29,000		
Check	H5655	113	29,000		

**Discussion:** Rainfall totals by month: April – 1.35", May - 6.40", June – 3.90", July – 1.40".

Irrigation totals by month: April – 0.00", May - 0.00", June – 2.50", July – 2.00"

Totals by month: April -1.35", May -6.40", June -6.40", July -3.40"

Even with supplemental irrigation, yields were not as high as expected most likely as a result of the high temperatures during pollination.

<sup>\*</sup>Information for the three hybrids on either side of the plot was eliminated due to poor irrigation coverage. We apologize for the error in plot design.

# 2010 King & Queen Early Maturity Corn Plot

**Cooperators:** Producer: David Carlton, William Davis Carlton

**Extension:** David Moore, VCE, Middle Peninsula

Stephen Davis, Summer Intern

**Agribusiness:** Participating Seed Companies

Previous Crop: Soybean s
Planting Date: April 5, 2010
Population: 27,000
Fertilizer: Biosolids

Sidedress: 60 lbs of nitrogen

**Crop Protection:** Pre-emergence: Atrazine + Simazine

Post: Glyphosate + Resolve

**Harvest Date:** August 27, 2010

Hybrid	Traits	Pop. (5/25)	% Moisture	Yield
Check (Pioneer 36V75)	RR2/HX/LL	26,000	18.9	40.2 (edge)
TA Seeds TA525-13V	YGVT3	26,000	18.0	35.5 (edge)
Check	RR2/HX/LL	26,000	18.2	63.9
Hubner H6110	RR2/HX/LL	27,500	17.3	70.5
Check	RR2/HX/LL	26,000	17.7	71.2
Southern States 538VT	YGVT3	25,500	17.2	76.7
Check	RR2/HX/LL	26,000	18.1	74.7
Mid-Atlantic 8109VT3	YGVT3	26,500	19.8	63.8
Check	RR2/HX/LL	26,000	19.6	68.6
Augusta 54-57	None	glyphosate	applied	
Check	RR2/HX/LL	26,000	20.5	64.7
Doebler's 633HXR	RR2/HX/LL	25,500	21.4	46.1
Check	RR2/HX/LL	26,000	18.8	66.2
Dyna-Gro 56R29	RR2/HX/LL	25,500	18.5	46.2
Check	RR2/HX/LL	26,000	18.1	64.6
Dekalb DKC 52-59	YGVT3	27,000	18.0	62.4
Check	RR2/HX/LL	26,000	17.9	70.2
Seed Consult. SCS10HQ70	RR2/HX	26,000	18.4	64.1
Check	RR2/HX/LL	26,000	18.2	66.7
Mycogen 2K592	RR2/HX	27,000	18.5	64.3
Check	RR2/HX/LL	27,000	18.2	68.6
Pioneer 35F40	RR2/HX/LL	28,000	18.0	73.3
Average Check			18.6	65.4

**Discussion:** Yields in this plot were about average for this area of the State in 2010. Drought and heat really "fried some fields depending on maturity and soil type. I know producers will be glad to get this year behind them. Use this and other Virginia Tech corn hybrid information when making planting decisions for 2011.

# 2010 New Kent Mid Maturity Corn Plot

Cooperators: Paul H. Davis, Clifton "Boogie" Davis

**Extension:** David Moore, VCE, Middle Peninsula

Stephen Davis, Summer Intern

**Agribusiness:** Participating Seed Companies

**Previous Crop:** Soybeans followed by Vetch Cover

Planting Date: April 28, 2010

**Population:** 24,500

Fertilizer: Broadcast: 18-46-60

Sidedress: 120 lbs of nitrogen + sulfur

**Crop Protection:** Burndown: Gramoxone + 2,4-D

Pre-emergence: Bicep + Atrazine

Post: Glyphosate

**Harvest Date:** August 31, 2010

Hybrid	Traits	Pop. (5/27)	% Moisture	Yield
Pioneer P1184HR	RR2/HX/LL	22,000	19.9	89.0
Dyna-Gro 57V40	YGVT3	22,000	20.2	89.0
Augusta A54-61	GT/CB/LL	20,000	21.5	83.5
TA Seeds TA700-11	CB/LL	glyphosate	applied	
NK N68-3000GT	GT/CB/LL	22,000	19.3	70.7
Hubner H5505	YGVT3	22,000	19.4	106.2
Doebler's 679GRQ	GT/CB/LL	23,000	18.4	109.5
Southern States SS84	YGVT3	23,500	20.3	105.7
Mid-Atlantic MA8143VT3	YGVT3	23,000	22.3	92.2
Dekalb DKC 62-54	YGVT3	24,000	19.6	133.5
Seed Consult. SCS11HQ38	RR2/HX	22,500	21.6	94.5
Mycogen 2E696	RR2/YGVT3	22,000	20.4	102.5
Seed Consult. SC11AGT30	GT/CB/LL	23,000	23.4	136.0

**Discussion:** Yields in this plot were not too bad. Not much rain fell during corn making time and the heat was incredible. Some pretty good yields sprinkled through the plot. Use these results and replicated yield data from the Virginia Corn Performance Trials when selecting hybrids for 2011.

# 2010 Middlesex Full Season Corn Hybrid Plot

**Cooperators:** Producer: Bill Gresham, Albert Marshall

**Extension:** David Moore, Middle Peninsula

Stephen Davis, Summer Intern

**Agribusiness:** Participating Seed Companies

Previous Crop: Soybean
Planting Date: April 16, 2010
Population: 30,000

**Fertilizer:** Broadcast: 23-30-60-15S with *AVAIL* 

45 with pesticides

Sidedress: 80 # N

**Crop Protection:** Burndown: Glyphosate

Pre-emergence: Bicep + Atrazine

Harvest Date: September 10, 2009

Hybrid	Traits	Population	% Moisture	Yield
Check (Pioneer 33M57)	RR2/HX/LL	27.000	18.7	76.9
TA Seeds TA717-20	GT/CB/LL	29,500	17.0	89.7
Southern States SS749	YGVT3	29,500	17.5	50.7
Seed Consult. SCS11HR69	RR2/HX	29,000	20.7	58.5
Pioneer P1456HR	RR2/HX/LL	28,000	19.1	19.7
NK Seeds N73V-3000GT	GT/CB/LL	29.500	18.7	60.9
Mycogen 2V732	RR2/YGVT3	30,000	15.5	72.7
Check	RR2/HX/LL	29,500	16.2	44.3
Mid-Atlantic MA5160GT	GT/CB/LL	30,000	16.5	68.7
Hubner H5909	YGVT3	29,500	16.7	88.0
Doebler's RPM725HRQ	RR2/HX/LL	28.500	16.4	84.2
Dekalb DKC 63-84	GT,CB,LL	28,500	14.7	127.9
Dyna-Gro 57V59	YGVT3	29,500	14.9	128.6
Augusta A68-67	GT/CB/LL	30,000	18.0	91.7
Check	RR2/HX/LL	29,000	17.3	24.7

**Discussion:** Yields in this plot were interesting. At one time, Bill and I both thought that the yields here would be close to zero (0). I have been surprised in a lot of fields. Keep in mind that these are strips and the entire field did not yield anywhere near 100 bushels. Use these results and replicated yield data from the Virginia Corn Performance Trials when selecting hybrids for 2011.

# 2010 Middlesex Mid Maturity Corn Plot

**Cooperators:** Producer: Jason Benton

**Extension:** David Moore, Middle Peninsula

Stephen Davis, Summer Intern

**Agribusiness:** Participating Seed Companies

Previous Crop: Soybean
Planting Date: April 7, 2010
Fertilizer: Broadcast: None

Pre-Emerge: 45-0-0 with herbicides

Sidedress: 100 lbs of nitrogen

**Crop Protection:** Burndown: Glyphosate

Pre-emergence: 1 qt. Atrazine + 1 Qt. Simazine

Post Emergence: Halex GT

**Harvest Date:** September 2, 2010

Hybrid	Traits	Pop. (5/26)	% Moisture	Yield
Augusta 54-61	GT/CB/LL	27,500	13.0	70.1
Check (Pioneer P1184)	HX1/LL/RR2	27,500	13.0	69.9
Doebler's 679GRQ	GT/CB/LL	25,000	12.9	65.7
Check	HX1/LL/RR2	27,500	13.0	58.1
Dyna-Gro 57V40	YGVT3	26,000	13.0	56.0
Check	HX1/LL/RR2	27,500	13.0	62.1
Hubner 5505	GT/CB/LL	28,000	13.1	60.7
Check	HX1,LL,RR2	27,500	13.3	55.1
Mid-Atlantic MA8143	YGVT3	28,000	13.4	51.4
Check	HX1/LL/RR2	27,500	13.4	59.2
Monsanto DKC 62-54	YGVT3	27,500	13.0	68.0
Check	HX1/LL/RR2	26,500	13.2	72.1
Mycogen 2E696	YGVT3/RR2	27,000	13.3	51.5
Check	HX1/LL/RR2	27,500	13.5	73.1
NK Seeds N68-3000GT	GT/CB/LL	28,000	13.2	75.0
Check	HX1/LL/RR2	26,500	13.4	84.5
Pioneer P1184	HX1/LL/RR2	28,000	13.5	90.4
Check	HX1/LL/RR2	26,500	13.9	66.8
SC11AGT30	GT/LL/CB	27,000	13.7	61.3
Check	HX1/LL/RR2	26,500	13.8	67.7
SCS11HQ38	RR/HX	28,500	13.7	50.9
Check	HX1/LL/RR2	26,500	13.9	69.2
Southern States 684VT3	YGVT3	26,500	13.7	63.3
Check	HX1/LL/RR2	27,500	13.9	63.4
TA Seeds TA700-11	CB/LL	27,000	14.0	65.4
Average Check:			13.4	66.8

**Discussion:** Typical of yields in this part of Middle Peninsula for 2010. Use this and other Virginia Tech corn hybrid yield information when making planting decisions for 2011.

# **Corn Hybrid Comparison**

**Cooperators:** Producer: Monte Swann, Bearcroft Farms

**Extension:** Matt Lewis, Northumberland/Lancaster

**Agribusiness:** Tommy Self, CPS

**Previous Crop:** Soybean

**Soil Type:** Sassafras fine sandy loam

**Planting Date:** April 26, 2010 - 27,500 seeds/acre

Fertilizer: Broadcast: 40-0-80-10S

Starter: 18gal 20-10-0 + Zn & B

Sidedress: 85-0-0 with Agrotain Plus®

**Crop Protection:** Burndown: 2.5pt Gramoxone®

Pre-emergence: 5.5pt Lumax®, 1qt Princep®, 1pt sticker, 2oz Tombstone®

**Harvest Date:** September 9, 2010

Hybrid	Traits	Maturity (Days)	Seed Treatment	% H <sub>2</sub> O	Yield
Dekalb 52-59	VT3	102	P250	13.1	63
Dekalb 50-44	VT3	100	P250	13.4	50
Dyna-Gro 40SS09	SmartStax	100	Acceleron	13.8	39
Pioneer 36V75	RR,LL,HX	103	Acceleron	13.9	47
Dyna-Gro 55V24	VT3	102	Acceleron	13.3	50
Dyna-Gro 44SS49	SmartStax	104	Acceleron	13.4	52
Pioneer 35F40	RR,LL,HX	105	P1250	14.2	69
Dekalb 57-66	VT3	107	P1250	14.2	57
Dyna-Gro 56R60	RR,LL,HX	108	P1250	14.2	49
NK N68B	GT3000	110	Avicta	14.5	48
Dyna-Gro 56Q86	GT3000	110	Avicta	13.8	55
Dekalb 52-59	VT3	102	P250	12.9	59

### **Discussion:**

Monte has participated in Extension corn hybrid plots for the last several years. This year, he was interested specifically in hybrids available to him through one of his seed suppliers. While yields were disappointing due to drought, it gave us a good look at extreme drought performance of these hybrids, with yields ranging from 39 to 69 bushels per acre. Use this and other university plot results when selecting new hybrids for 2011.

# 2010 Ag Expo Corn Hybrid Demonstration Plot

**Cooperators:** Producer: Ferdie F. Chandler, Jr. – Windsor Farms

**Extension:** Matt Lewis, Northumberland / Lancaster

Keith Balderson, Essex

Wade Thomason, Virginia Tech Annah Latane, VCE Summer Intern

**Agribusiness:** Participating Seed Companies

**Previous Crop:** Soybean

Soil Type: Kempsville loam Planting Date: April 16, 2010

Fertilizer: Broadcast: 30-0-60 per acre

Starter: 20 gallons 15-15-0 plus micros per acre

Sidedress: 90-0-0 per acre

**Crop Protection:** Pre-emergence: Lumax, Princep, Warrior, Gramoxone

Harvest Date: September 7, 2010

Hybrid	Maturity	Stand	Traits	% Moisture	Yield
Augusta 54-57	E	27,000		13.8	84.1
	M		Agrisure		
Augusta 54-61		28,000	GT/CB/LL	14.2	96.7
Augusta 68-67	F	29,500	Agrisure CB/LL	15.7	94.9
	Е		Genuity		
Dyna-Gro 56R29		25,500	SmartStax	14.8	82.7
	M		YieldGard VT		
Dyna-Gro 57V40		28,000	Triple	14.4	87.0
	F		YieldGard VT		
Dyna-Gro 57V59		27,500	Triple	14.8	87.9
	Е		YieldGard VT		
Dekalb 52-59		26,500	Triple	13.7	93.8
	M		YieldGard VT		
Dekalb 62-54		27,000	Triple	13.8	87.6
	F		YieldGard VT		
Dekalb 63-84		27,500	Triple	13.7	91.6
	Е		Roundup Ready,		
Supreme EX 10HQ70		24,000	Herculex Xtra	14.1	84.7
	M		Roundup Ready,		
Supreme EX 11HQ38		28,500	Herculex Xtra	16.2	73.3
	F		Roundup Ready,		
Supreme EX 11HR69		24,500	Herculex 1	18.3	90.4
	M		Agrisure		
Seed Consultants 11AGT30		27,000	GT/CB/LL	16.6	95.7
	Е		Roundup Ready,		
			LibertyLink,		
Doeblers RPM633		28,000	Herculex 1	13.8	87.6
Doeblers 679	M	26,500	Agrisure 3000	14	87.4
	F		Roundup Ready,		
			LibertyLink,		
Doeblers 725		25,000	Herculex Xtra	16	81.1
	E		Genuity	13.7	89.9
Hubner 6110		28,000	SmartStax		

Hubner 5505   F		M		YieldGard VT		106.6
F	Hubner 5505	171	23.500		14.2	100.0
Hubner 5909   28,500   Triple   14.9   98.5     NKN68B-3000   M   27,000   Agrisure 3000   13.7   88.7     NKN73V-3000   F   30,500   Agrisure 3000   16   95.9     E		F			- · · · -	
NKN68B-3000         M         27,000         Agrisure 3000         13.7         88.7           NKN73V-3000         F         30,500         Agrisure 3000         16         95.9           SS 538         27,000         Triple         14.2         90.6           SS 538         27,000         Triple         14.2         90.6           SS 684         27,000         Triple         14.9         97.2           SS 749         26,000         Triple         16         73.1           SS 749         26,000         Triple         16         73.1           Mid-Atlantic 8109         27,000         Triple         15.9         85.0           Mid-Atlantic 8143         27,000         Triple         17.6         90.4           Mid-Atlantic 5160         F         30,500         Agrisure GT         15.5         88.4           Mycogen 2K592         28,500         Herculex Xtra         14.4         86.5           Mycogen 2E696         27,000         Ready Corn 2         14.7         80.2           Mycogen 2V732         28,000         Ready Corn 2         15.9         93.6           Mycogen 2V732         28,000         Ready Corn 2         15.9         93.6 <td>Hubner 5909</td> <td>-</td> <td>28,500</td> <td></td> <td>14.9</td> <td>98.5</td>	Hubner 5909	-	28,500		14.9	98.5
NKN73V-3000   F   30,500   Agrisure 3000   16   95.9		M				
E		F	•		16	95.9
SS 538		Е				
M	SS 538		27,000		14.2	90.6
F YieldGard VT Z6,000 Triple 16 73.1  E YieldGard VT YieldGard VT Triple 15.9 85.0  Mid-Atlantic 8109 Z7,000 Triple 15.9 85.0  Mid-Atlantic 8143 Z7,000 Triple 17.6 90.4  Mid-Atlantic 5160 F 30,500 Agrisure GT 15.5 88.4  E Roundup Ready, Mycogen 2K592 Z8,500 Herculex Xtra 14.4 86.5  M YieldGard VT Triple, Roundup Mycogen 2E696 Z7,000 Ready Corn 2 14.7 80.2  F YieldGard VT Triple, Roundup Mycogen 2V732 Z8,000 Ready Corn 2 15 93.6  E YieldGard VT Triple, Roundup  Mycogen 2V732 Z8,000 Ready Corn 2 15 93.6  TA 525-13V Z5,000 Triple 13.5 75.6  TA 700-11 M 27,000 Agrisure CB/LL 15.2 93.4  TA 717-20 F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready Corn 2, LibertyLink, Pioneer 35F40 Z9,500 Herculex 1 14.1 90.2		M	•			
SS 749   26,000   Triple   16   73.1	SS 684		27,000	Triple	14.9	97.2
E   YieldGard VT		F	-	YieldGard VT		
Mid-Atlantic 8109         27,000         Triple         15.9         85.0           Mid-Atlantic 8143         27,000         Triple         17.6         90.4           Mid-Atlantic 5160         F         30,500         Agrisure GT         15.5         88.4           Mycogen 2K592         E         Roundup Ready, Herculex Xtra         14.4         86.5           Mycogen 2E696         27,000         Ready Corn 2         14.7         80.2           Mycogen 2V732         28,000         Ready Corn 2         15         93.6           Mycogen 2V732         28,000         Ready Corn 2         15         93.6           TA 525-13V         25,000         Triple         13.5         75.6           TA 700-11         M         27,000         Agrisure CB/LL         15.2         93.4           TA 717-20         F         26,000         Agrisure 3000         15.6         88.7           E         Roundup Ready Corn 2, LibertyLink,         LibertyLink,         LibertyLink,         Pioneer 35F40         29,500         Herculex 1         14.1         90.2	SS 749		26,000	Triple	16	73.1
Mid-Atlantic 8143 27,000 Triple 17.6 90.4  Mid-Atlantic 5160 F 30,500 Agrisure GT 15.5 88.4  E Roundup Ready, Mycogen 2K592 28,500 Herculex Xtra 14.4 86.5  M YieldGard VT Triple, Roundup  Mycogen 2E696 27,000 Ready Corn 2 14.7 80.2  F YieldGard VT Triple, Roundup  Mycogen 2V732 28,000 Ready Corn 2 15 93.6  E YieldGard VT Triple Roundup  TA 525-13V 25,000 Triple 13.5 75.6  TA 700-11 M 27,000 Agrisure CB/LL 15.2 93.4  TA 717-20 F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready Corn 2, LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2		E				
Mid-Atlantic 8143         27,000         Triple         17.6         90.4           Mid-Atlantic 5160         F         30,500         Agrisure GT         15.5         88.4           Mycogen 2K592         E         Roundup Ready, 28,500         Herculex Xtra         14.4         86.5           Mycogen 2E696         27,000         Ready Corn 2         14.7         80.2           Mycogen 2V732         28,000         Ready Corn 2         15         93.6           E         YieldGard VT Triple, Roundup         Triple, Roundup         Triple, Roundup         13.5         75.6           TA 525-13V         25,000         Triple         13.5         75.6           TA 700-11         M         27,000         Agrisure CB/LL         15.2         93.4           TA 717-20         F         26,000         Agrisure 3000         15.6         88.7           E         Roundup Ready Corn 2, LibertyLink,         LibertyLink,         14.1         90.2	Mid-Atlantic 8109		27,000		15.9	85.0
Mid-Atlantic 5160       F       30,500       Agrisure GT       15.5       88.4         Mycogen 2K592       28,500       Herculex Xtra       14.4       86.5         M       YieldGard VT Triple, Roundup Ready Corn 2       14.7       80.2         Mycogen 2E696       27,000       Ready Corn 2       14.7       80.2         F       YieldGard VT Triple, Roundup       700.2       15       93.6         Mycogen 2V732       28,000       Ready Corn 2       15       93.6         TA 525-13V       25,000       Triple       13.5       75.6         TA 700-11       M       27,000       Agrisure CB/LL       15.2       93.4         TA 717-20       F       26,000       Agrisure 3000       15.6       88.7         E       Roundup Ready Corn 2, LibertyLink,         Corn 2, LibertyLink,       LibertyLink,       90.2		M				
E Roundup Ready,  Mycogen 2K592						
Mycogen 2K592       28,500       Herculex Xtra       14.4       86.5         M       YieldGard VT Triple, Roundup       27,000       Ready Corn 2       14.7       80.2         Mycogen 2E696       27,000       Ready Corn 2       14.7       80.2         F       YieldGard VT Triple, Roundup       28,000       Ready Corn 2       15       93.6         Mycogen 2V732       E       YieldGard VT Triple       13.5       75.6         TA 525-13V       25,000       Triple       13.5       75.6         TA 700-11       M       27,000       Agrisure CB/LL       15.2       93.4         TA 717-20       F       26,000       Agrisure 3000       15.6       88.7         E       Roundup Ready Corn 2, LibertyLink,       29,500       Herculex 1       14.1       90.2	Mid-Atlantic 5160		30,500		15.5	88.4
Mycogen 2E696  Mycogen 2E696  E  Triple, Roundup  Z7,000  Ready Corn 2  YieldGard VT  Triple, Roundup  Z8,000  Ready Corn 2  Z8,000  Ready Corn 2  YieldGard VT  Triple, Roundup  Z8,000  Triple  TA 525-13V  TA 700-11  M  Z7,000  Agrisure CB/LL  TA 717-20  F  Z6,000  Agrisure 3000  Agrisure 3000  E  Roundup Ready  Corn 2,  LibertyLink,  Pioneer 35F40  Pioneer 35F40  PieldGard VT  Tangle, Roundup  Z8,000  Ready Corn 2  LibertyLink,  Pioneer 35F40  Pioneer 35F40  Agrisure 3000  Triple  Tangle  Tangle		E				
Triple, Roundup Ready Corn 2 14.7 80.2  F YieldGard VT Triple, Roundup  Mycogen 2V732 28,000 Ready Corn 2 15 93.6  E YieldGard VT  TA 525-13V 25,000 Triple 13.5 75.6  TA 700-11 M 27,000 Agrisure CB/LL 15.2 93.4  TA 717-20 F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready Corn 2, LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2	Mycogen 2K592		28,500		14.4	86.5
Mycogen 2E696       27,000 Ready Corn 2       14.7       80.2         F       YieldGard VT         Triple, Roundup         Mycogen 2V732       28,000 Ready Corn 2       15       93.6         TA 525-13V       25,000 Triple       13.5       75.6         TA 700-11       M       27,000 Agrisure CB/LL       15.2       93.4         TA 717-20       F       26,000 Agrisure 3000       15.6       88.7         E       Roundup Ready Corn 2, LibertyLink,         LibertyLink,         Pioneer 35F40       29,500 Herculex 1       14.1       90.2		M				
F YieldGard VT Triple, Roundup  28,000 Ready Corn 2 15 93.6  E YieldGard VT  TA 525-13V 25,000 Triple 13.5 75.6  TA 700-11 M 27,000 Agrisure CB/LL 15.2 93.4  TA 717-20 F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready Corn 2, LibertyLink,  Pioneer 35F40 29,500 Herculex 1 14.1 90.2			27.000			
Triple, Roundup  28,000 Ready Corn 2 15 93.6  E YieldGard VT  TA 525-13V 25,000 Triple 13.5 75.6  TA 700-11 M 27,000 Agrisure CB/LL 15.2 93.4  TA 717-20 F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready  Corn 2,  LibertyLink,  Pioneer 35F40 29,500 Herculex 1 14.1 90.2	Mycogen 2E696		27,000		14.7	80.2
Mycogen 2V732         28,000         Ready Corn 2         15         93.6           E         YieldGard VT         25,000         Triple         13.5         75.6           TA 700-11         M         27,000         Agrisure CB/LL         15.2         93.4           TA 717-20         F         26,000         Agrisure 3000         15.6         88.7           E         Roundup Ready Corn 2, LibertyLink,         29,500         Herculex 1         14.1         90.2		F				
E YieldGard VT TA 525-13V 25,000 Triple 13.5 75.6 TA 700-11 M 27,000 Agrisure CB/LL 15.2 93.4 TA 717-20 F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready Corn 2, LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2	My 20 20 20 20 70 72 2		20,000		1.5	02.6
TA 525-13V         25,000         Triple         13.5         75.6           TA 700-11         M         27,000         Agrisure CB/LL         15.2         93.4           TA 717-20         F         26,000         Agrisure 3000         15.6         88.7           E         Roundup Ready Corn 2, LibertyLink,           Pioneer 35F40         29,500         Herculex 1         14.1         90.2	Mycogen 20732	Г	28,000		15	93.6
TA 700-11 M 27,000 Agrisure CB/LL 15.2 93.4 TA 717-20 F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready Corn 2, LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2	TΛ 525-13V	E	25 000		12.5	75.6
F 26,000 Agrisure 3000 15.6 88.7  E Roundup Ready Corn 2, LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2		M				
E Roundup Ready Corn 2, LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2						
Corn 2, LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2	TA 717-20		20,000		13.0	00.7
LibertyLink, Pioneer 35F40 29,500 Herculex 1 14.1 90.2		E				
Pioneer 35F40 29,500 Herculex 1 14.1 90.2				•		
	Pioneer 35F40		29.500		14 1	90.2
M Koundup Keady		M		Roundup Ready		, , , ,
Corn 2,		1.1				
LibertyLink,						
	Pioneer 1184		29,000		15.1	86.2
F Roundup Ready		F	-	Roundup Ready		
Corn 2,						
LibertyLink,				,		
· · · · · · · · · · · · · · · · · · ·	Pioneer 1456		27,000	Herculex 1	14.7	
	Average Early Hybrids					
	Average Mid Hybrids					
Average Full Hybrids 88.4	Average Full Hybrids					88.4

**Discussion:** Relatively poor yields due to drought and excessive heat. Yields were actually better than what much of the Northern Neck and Middle Peninsula achieved in 2010 as 1.5 inches of rain fell on the plot on June 28<sup>th</sup>. Use this and replicated data from the corn performance trials when selecting hybrids for 2011.

# 2010 Dinwiddie Corn Hybrid Yield Comparison Trial

**Cooperators:** Producer: Billy Bain

**Extension:** Mike Parrish - Dinwiddie **Agribusiness:** Participating Seed Companies

**Previous Crop:** Soybeans

**Soil Type:** Mattaponi, Sandy Loam

Planting Date: April 13, 2010

Fertilizer: Broadcast: 500 lbs.5-10-30

Starter: 15 gallons 14-14-0 Sidedress: 40 gallons 24-0-0-3(S)

**Crop Protection:** Burndown: 1qt. Roundup & 1pt. 2,4-D

Pre-emergence: 2qt. Atrazine +1pt. Dual Mag + 1pt. Simazine

**Harvest Date:** August 31, 2010

Hybrid	Maturity	% Moisture	Yield
NK N68B	M	16.4	127
Mid Atlantic Seeds 8143	M	16.5	158
Augusta 54-61	M	13.9	120
Pioneer 1184	M	14.8	148
Dyna-Gro 57V40	M	20.1	119
Dekalb 62-54	M	14.3	119
TA 700-11	M	23.1	118
Hubner 5505	M	15.7	153
Mycogen 2E696	M	13.9	114
Doeblers 679	M	14.3	119
SS 684VT3	M	14.2	133
Supreme EX SCS11HQ38	M	16.5	125
Supreme EX SCS11AGT30	M	14.5	149
MA 5160	FS	20.1	146
Mycogen 2V732	FS	13.7	144
N 73V-3000	FS	13.6	145
Н 5909	FS	13.8	139
DKC 63-84	FS	13.7	139
Pioneer 1456HR	FS	14.2	141
SCS 11HR69	FS	14.1	122
Dyna 57V59	FS	14.1	150
TA 717-20	FS	14.5	139
Doelbers 725	FS	14.7	131
SS 749	FS	14.4	142
Augusta 6867	FS	14.3	138
Pioneer 33F85	FS	14.5	162

**Discussion:** Yields were influenced by excessive heat(>95F) even under the irrigated condition during pollination. This plot was irrigated by center pivot and received close to 10 acre inches of water from May to August. Use this and replicated data from the Corn Performance Trials when selecting hybrids for 2011.

# King & Queen Corn Hybrid Demonstration Plot

Cooperators: Producer: Todd Henley

**Extension:** Keith Balderson and David Moore, Middle Peninsula

Stephen Davis and Annah Latane, VCE Summer Interns

**Agribusiness:** Participating Seed Companies

**Previous Crop:** Soybeans

**Soil Type:** State and Tetotum fine sandy loams

Planting Date: April 19, 2010 Fertilizer: Broadcast: 0-0-60

Starter: 18 gallons per acre of 20-10-0 plus micros

Sidedress: 100-0-0-12 per acre

**Crop Protection:** Burndown: Gramoxone

Pre-emergence: Lumax, atrazine, and princep

**Harvest Date:** September 10, 2010

Hybrid	Maturity	Traits	Population	% Moisture	Yield
Augusta 54-57	Е		24,000	14.5	114.3
Augusta 54-61	M	Agrisure GT/CB/LL	26,500	14.9	122.4
Doeblers RPM633HXR	Е	RR/LL/HX1	27,500	15.0	115.5
Doeblers 679GRO	M	Agrisure 3000	24,500	12.7	110.1
Dyna-Gro 56R29	Е	Genuity SmartStax	25,500	12.9	99.7
Dyna-Gro 57V40	M	Yield Gard VT Triple	25,500	14.2	118.4
Dekalb 52-59	Е	Yield Gard VT Triple	29,500	14.1	123.0
Dekalb 62-54	M	Yield Gard VT Triple	25,500	14.1	127.0
Hubner 6110	Е	Genvity Smart Stax	26,000	12.1	128.0
Hubner 5505	M	Yield Gard VT Triple	24,500	13.5	130.9
Mycogen 2K592	Е	RR/HXX	25,500	14.5	116.5
Mycogen 2E696	M	Yield Gard VT Triple	25,000	14.8	109.7
SS 538VT3	Е	Yield Gard VT Triple	23,500	13.9	127.6
SS 684	M	Yield Gard VT Triple	24,500	15.2	126.2
Pioneer 35F40	Е	RR2/LL/HX1	25,500	13.8	126.9
Pioneer 1184HR	M	RR2/LL/HX1	26,000	15.0	132.3
Mid-Atlantic Seeds 8109	Е	Yield Gard VT Triple	26,500	15.1	123.5
Mid-Atlantic Seeds 8143	M	Yield Gard VT Triple	28,500	15.8	129.0
Seed Consultants Ext 10HQ70	Е	RR/Herculex Xtra	26,000	14.1	118.0
Seed Consultants Ext 11HQ38	M	RR/Herculex Xtra	26,500	15.4	122.0
T.A. Seeds 525-13V	Е	Yield Gard VT Triple	22,000	14.3	106.1
T.A. Seeds 700-11	M	Agrisure CB/LL	26,000	15.3	125.2
Seed Consultants 11AGT30	M	Agrisure GT/CB/LL	25,000	14.8	119.3
NK N68B 3000 GT	Е	Agrisure 3000	27,500	12.5	122.0
Average of Early Hybrids				·	118.4
Average of Medium Hybrids					122.4

**Discussion:** Very good yields for 2010 as a stray thunderstorm in late June provided almost 2 inches of rain just prior to pollination. Use this and replicated data from the Corn Performance Trials when selecting hybrids for 2011.

# 2010 Middlesex Corn Nematode Seed Treatment Study

**Cooperators: Producer:** John and E.G. Fleet

Robert Lewis

**Extension:** David Moore, Keith Balderson, Middle Peninsula

Stephen Davis, Summer Intern

**Agribusiness:** Pioneer, A DuPont Company

Previous Crop: Soybean April 7, 2010

Fertilizer: Broadcast: 60-50-90-5s

Sidedress: 100 lbs of nitrogen

**Crop Protection:** Burndown: Glyphosate

Pre-emergence: 5 pts. Lumax, 1 pt. atrazine, 1 qt. Princep per acre

**Harvest Date:** August 26, 2010

Treatment	Pop. (5/26)	% Moisture	Yield
Cruiser Seed Treatment 1	26,500	20.0	75.2
Avicta Seed Treatment 1	27,500	19.7	78.7
Cruiser Seed Treatment 2	28,000	18.8	96.6
Avicta Seed Treatment 2	27,000	18.1	83.3
Cruiser Seed Treatment 3	28,000	18.2	101.9
Avicta Seed Treatment 3	26,500	18.4	100.9
Cruiser Seed Treatment 4	25,500	19.4	84.9
Avicta Seed Treatment 4	26,500	18.6	90.9
Average Cruiser	27,000	19.1	89.7
Average Avicta	26,875	18.7	88.5

**Discussion:** There has been increased interest in nematodes in corn and some seed companies have begun introducing seed applied technology for control and suppression of nematodes in corn and soybeans. A nematode assay was done for each replication and low levels (not as high as 2008) of Stubby Root nematodes were present in all replications. In 2008, Stubby Root nematodes caused some early season stunting of the corn in this field. There were no Root-Knot nematodes present according to same test samples. This work was repeated over several locations, so there was no untreated check in this plot. There were no significant differences in yield, moisture and populations in the two seed treatments. Use this and other Virginia Tech corn production information when making planting decisions for 2011

# 2010 King William Corn Nematode Seed Treatment Study

**Cooperators:** Producer: David Johnson

**Extension:** David Moore, Keith Balderson Middle Peninsula

Stephen Davis, Summer Intern

**Agribusiness:** Pioneer, A DuPont Company

**Previous Crop:** Soybeans (followed by wheat cover)

Planting Date: April 15, 2010 Fertilizer: Broadcast: 0-0-110

Starter: 50-30-0-1zn Sidedress: 100 lbs of nitrogen

**Crop Protection:** Burndown: 1 qt. Glyphosate + .75 pint 2,4-D

Pre-emergence: 1.3# Atrazine 90 + 1.1# Simazine 90

Check Hybrid: Dekalb DKC 52-59 (RR2, YGVT3)
Treatments: Pioneer 34F97 with Avicta Complete

Pioneer 34F97 with Cruiser Extreme 500

**Harvest Date:** August 26, 2010

Treatment	Pop. (5/27)	% Moisture	Yield
Check 1	27,000	16.3	19.9
Cruiser 1	28,000	21.5	19.8
Avicta 1	27,500	21.3	17.0
Check 2	27,500	16.5	20.3
Cruiser 2	26,500	19.9	17.3
Avicta 2	26,000	19.5	13.4
Check 3	27,000	16.1	16.1
Cruiser 3	27,000	18.8	15.8
Avicta 3	26,000	19.2	20.4
Check 4	27,000	15.1	22.5
Cruiser 4	26,500	19.8	18.3
Avicta 4	25,500	17.8	18.5
Average Check	27,125	16.0	19.7
Average Cruiser	27,000	20.0	17.8
Average Avicta	26,500	19.5	17.3

# **Nematode Assays:**

Rating	Nematodes Present
В	Stubby Root
Α	
В	Dagger, Lance
В	Lesion, Stubby Root, Lance
В	Lesion, Stubby Root, Lance
В	Lesion, Stubby Root, Lance
В	Stubby Root, Lance
Α	Stubby Root
Α	Stubby Root
В	Stubby Root, Lance
В	Lesion, Lance
Α	Root-Knot
	B A B B B B A A B

**Discussion:** For the past several years there has been interest in nematodes affecting corn yields and some companies have developed seed applied nematode treatments. This test showed basically that there is no difference in using Avicta seed treatment compared to Cruiser seed treatment and further compared to a check hybrid without either. I have included the nematode ratings for each strip. Nematode levels were not high, neither were yields. Nematode numbers in 2008, (last time in corn) were considerably higher.

Statistically, there were no differences in these yields. These comparisons of Cruiser and Avicta were replicated in several other plots in the Middle Peninsula. Use this and other Virginia Tech corn production information when making planting decisions for 2011.

### **Evaluation of Avicta® Seed Treatment for Nematodes**

Cooperators: Producer: Alan Welch

**Extension:** Matt Lewis, Northumberland/Lancaster

Previous Crop:SoybeansPlanting Date:April 19, 2010Hybrid:NK N73V-3000GT

**Fertilizer:** Broadcast: 25-70-70 dry plus 50-0-0 w/ chemicals

Sidedress: 60-0-0

Crop Protection: Lumax®, Atrazine®, Simazine®, Gramoxone®

**Harvest Date:** September 9, 2010

Rep	Treatment	% Moisture	Yield
1	Avicta Complete	15.5	102
1	Cruiser Extreme	15.0	101
2	Avicta Complete	14.7	103
2	Cruiser Extreme	14.8	105
3	Avicta Complete	14.7	101
3	Cruiser Extreme	15.2	98
4	Avicta Complete	15.0	103
4	Cruiser Extreme	14.7	109
Avg	Avicta Complete	15.0	102
Avg	Cruiser Extreme	14.9	103

### **Discussion:**

Alan has had problems with lance nematodes is both corn and soybeans in this field for several years. Avicta Complete® is a seed treatment that includes both Cruiser Extreme® and Avicta®, which is labeled to help with nematodes including lance nematodes. In this study, corn treated with Avicta Complete® was compared to the same corn hybrid treated with Cruiser Extreme®, so the only difference was whether or not seed had the Avicta® nematicide on it. In this study, Avicta® provided no measurable relief from nematodes. We will continue to evaluate products and strategies to minimize nematode damage to the Virginia corn crop.

# **Caroline Avicta Irrigated Corn Seed Treatment Test Plot**

**Cooperators:** Producer: Cloverfield Enterprises

**Extension:** Keith Balderson, VCE Middle Peninsula

Annah Latane, VCE Summer Interns

Agribusiness: Brick Goldman, Syngenta Seed

**Previous Crop:** Soybeans

Soil Type: Bojac sandy loam Hybrid: NK 73V-3000GT Planting Date: April 27, 2010

**Fertilizer:** Starter: 40-0-0 plus micros per acre

Pop Up: 2 gallons per acre 5-20-5 Broadcast: 100 lbs. per acre potash Sidedress: 160-0-20 per acre

**Crop Protection:** Burndown: Gramoxone and 2,4-D

Pre-emergence: 2.5 qts per acre Lumax and 1 qt. per acre Princep

**Harvest Date:** September 16, 2010

27,000	17.5	208
27,000		200
27,000	16.8	199
29,000	16.7	193
28,000	17.4	187
27,000	16.6	191
27,667	15.2	194
27,500	15.2	193
	27,000 27,667	27,000 16.6 27,667 15.2

### Discussion:

Avicta is a nematicide seed treatment. Nematode assays from soil samples taken on May 27th indicated a lance nematode problem in the check plots and a possible lance nematode problem in the Avicta plots given current Virginia Tech nematode economic thresholds. There was no significant difference in yield in either treatment.

# King & Queen Avicta Seed Treatment Test Plot

**Cooperators:** Producer: Todd Henley

**Extension:** Keith Balderson and David Moore, Middle Peninsula

Stephen Davis and Annah Latane, VCE Summer Interns

Agribusiness: Ginny Barnes, Pioneer Hi-Bred

**Previous Crop:** Soybeans

**Soil Type:** State fine sandy loam

Hybrid: Pioneer 34F97
Planting Date: April 19, 2010
Fertilizer: Broadcast: 0-0-60

Starter: 18 gallons per acre of 20-10-0 plus micros

Sidedress: 100-0-0-12 per acre

**Crop Protection:** Burndown: Gramoxone

Pre-emergence: Lumax, atrazine, and princep

**Harvest Date:** September 10, 2010

Treatment	Rep.	Population	% Moisture	Yield
Check	1	24,500	15.3	111.5
Avicta	1	25,000	15.5	106.7
Avicta	2	24,000	15.3	105.9
Check	2	23,000	14.9	106.5
Check	3	20,500	15.4	104.3
Avicta	3	26,000	14.7	100.5
Average Check		22,267	15.2	107.4
Average Avicta		25,000	15.2	104.4

### **Discussion:**

Avicta is a nematicide seed treatment. In June we sampled each plot for nematode levels. None of the plots showed nematode levels high enough to cause yield loss according to current nematode threshold levels. Drought conditions reduced yields in the plot, and we did not get a response to the Avicta.

# King William Avicta Corn Seed Treatment Test Plot

**Cooperators:** Producer: Cohoke Farm

**Extension:** Keith Balderson, VCE Middle Peninsula

Annah Latane, VCE Summer Interns

Agribusiness: Ginny Barnes, Pioneer Hi-Bred

**Previous Crop:** Soybeans

**Soil Type:** Tomotley fine sandy loam

Hybrid: Pioneer 34F97
Planting Date: April 22, 2010

**Fertilizer:** Starter: 40-20-0 plus micros per acre

Broadcast: 20-35-70 per acre Sidedress: 90-0-0-11 per acre

**Crop Protection:** Burndown: Glyphosate

Pre-emergence: Resolve and princep

In-furrow: Capture Insecticide

Harvest Date: September 7, 2010

Treatment	Rep.	Population	% Moisture	Yield
Check	1	26,000	15.9	46.6
Avicta	1	24,000	16.2	45.6
Check	2	23,500	15.9	47.7
Avicta	2	26,000	16.6	66.8
Average Check		24,750	15.9	47.2
Average Avicta		25,000	16.4	56.2

### **Discussion:**

Avicta is a nematicide seed treatment. Two soil samples for nematode assay were taken on June 2nd from the plot area. One of the samples indicated a possible problem with nematodes, while the other sample indicated a nematode problem using current Virginia Tech nematode economic thresholds. Drought and heat stress greatly reduced yields, and yield variability within the replications was very great. The Avicta plots tended to yield more due to a big difference in replication two, but the difference was not statistically different.

# **Caroline Votivo Irrigated Corn Seed Treatment Test Plot**

**Cooperators:** Producer: Cloverfield Enterprises

Extension: Keith Balderson, VCE Middle Peninsula Annah Latane, VCE Summer Intern

Agribusiness: Berry Lewis, Bayer Crop Science

**Previous Crop:** Soybeans

Soil Type: Bojac sandy loam Hybrid: Augusta 06-06 RR Planting Date: April 27, 2010

**Fertilizer:** Starter: 40-0-0 plus micros per acre

Pop Up: 2 gallons per acre 5-20-5 Broadcast: 100 lbs. per acre potash Sidedress: 160-0-0-20 per acre injected

**Crop Protection:** Burndown: Gramoxone and 2,4-D

Pre-emergence: 2.5 qts. per acre Lumax and 1 qt. per acre Princep

In-furrow: Silencer insecticide

**Harvest Date:** September 17, 2010

Treatment	Rep.	Population	% Moisture	Yield
Check	1	25,500	17.2	186
Votivo	1	27,500	17.4	193
Check	2	26,500	18.2	190
Votivo	2	28,500	18.0	194
Check	3	27,000	16.8	188
Votivo	3	26,000	17.2	190
Average Check		26,333	17.4	188
Average Votivo		27,333	17.5	192
LSD (0.10)			0.5	4

### **Discussion:**

Votivo is a nematicide seed treatment. Nematode assays from soil samples taken on May 27th indicated a problem with lance nematodes in the check plots and a possible problem with lance nematodes in the Votivo plots according to current Virginia Tech nematode economic thresholds. Votivo treatments yielded better across all replications, and the difference was statistically different at the 10% confidence level.

# King William Votivo Corn Seed Treatment Test Plot

**Cooperators:** Producer: Cohoke Farm

**Extension:** Keith Balderson, VCE Middle Peninsula

Annah Latane, VCE Summer Intern

**Agribusiness:** Berry Lewis, Bayer Crop Science

**Previous Crop:** Soybeans

Soil Type: Tomotley fine sandy loam Hybrid: Augusta 06-06 RR Planting Date: April 22, 2010

**Fertilizer:** Starter: 40-20-0 plus micros per acre

Broadcast: 20-35-70 per acre Sidedress: 90-0-0-11 per acre

**Crop Protection:** Burndown: Glyphosate

Pre-emergence: Resolve and princep

In-furrow: Capture Insecticide

Harvest Date: September 7, 2010

Treatment	Rep.	Population	% Moisture	Yield
Check	1	26,000	17.2	36.7
Votivo	1	26,000	16.5	54.6
Check	2	24,500	15.8	67.1
Votivo	2	26,000	15.5	56.8
Average Check		25,250	16.5	51.9
Average Votivo		26,000	16.0	55.7

### Discussion:

Votivo is a nematicide seed treatment. Two soil samples for nematode assay were taken on June 2nd from the plot area. One of the samples indicated a possible problem with nematodes, while the other sample indicated a nematode problem. Drought and heat stress greatly reduced yields, and yield variability within the replications was very great. The Votivo plots tended to yield more, but the difference was not statistically different.

# **Evaluation of Deadline® Molluscicide for Slugs**

Cooperators: Producer: Alan Welch

**Extension:** Matt Lewis, Northumberland/Lancaster

Shanna Minarik, Research Assistant

Previous Crop: Soybeans
Planting Date: April 4, 2010
Hybrid: Hubner 5477

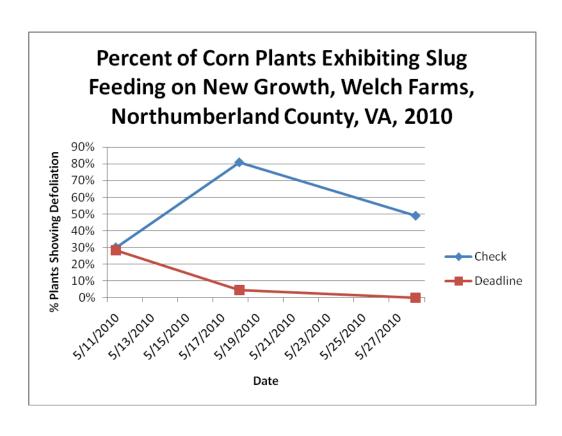
**Fertilizer:** 3 tons chicken litter/acre

60-0-0 sidedress

**Crop Protection:** Lumax®, Atrazine, Simazine, Gramoxone®

**Harvest Date:** September 17, 2010

Rep	Trt	% H <sub>2</sub> O	Yield 133	
1	Deadline	16.2		
1	Check	16.2	140	
2	Deadline	14.3	138	
2	Check	14.6	142	
3	Deadline	13.2	148	
3	Check	13.6	151	
Avg	Deadline	14.6	140	
Avg	Check	14.8	144	



### **Discussion:**

Although weather following planting was relatively warm and dry, and therefore slug feeding in Eastern VA was relatively low in 2010, this field showed significant damage due to slugs, and we decided to see if Deadline M-Ps® would kill the slugs and improve corn yields. Deadline was applied at the rate of 10lbs/acre to 3 12-row strips in the field on May 6, and another 3 strips were left untreated. To determine if the product was working to kill slugs, new corn growth was evaluated to see if slugs were feeding. This was done on May 11, May 18, and May 28. Results of these evaluations are in the graph above. On May 11, feeding on new growth in both the treated and untreated strips were identical. By May 18, feeding in the treated strips had nearly ceased, but feeding increased dramatically where Deadline was not applied. This trend was again noted on May 28, though feeding in the untreated strips had begun to decline as weather remained warm and dry and corn grew at a fast pace. Deadline was effective at killing slugs.

The experiment was taken to harvest on 9/17 and there was no statistical difference in yield. While slugs had been feeding on a high number of plants in the untreated strips, no stand losses were recorded and feeding on individual plants was light to moderate (less than 25% of total leaf area consumed). This experiment seems to mirror the results of similar experiments in past years, which indicate only very heavy feeding resulting in significant stand loss and/or extreme levels of defoliation impacts final yield. We will continue to evaluate slug treatments both in Virginia and through partnerships with other researchers in the mid-Atlantic to determine appropriate IPM practices for slugs in corn.

# Westmoreland County Amplify-D and Wolftrax Zn Corn Seed Treatment Plot

**Cooperators:** Producer: Keith Balderson

**Extension:** Keith Balderson, Middle Peninsula

Annah Latane, VCE Summer Intern

**Previous Crop:** Soybeans

**Soil Type:** Kempsville fine sandy loam

**Hybrid:** Augusta 06-06 RR **Planting Date:** April 10, 2010

Fertilizer: Broadcast: 50-60-60-20 per acre

Sidedress: 90-0-0 per acre

**Crop Protection:** Burndown: Gramoxone

Pre-emergence: Bicep and Princep

**Harvest Date:** September 2, 2010

Treatment	Rep.	Population	% Moisture	Yield
Check	1	25,000		84.4
Wolftrax Zn+ Amplify-D	1	26,000		83.0
Check	2	24,000		82.0
Wolftrax Zn + Amplify-D	2	25,000		80.5
Check	3	25,000		80.3
Wolftrax Zn + Amplify-D	3	24,500		79.8
Average Check		24,677	15.3	82.2
Average Wolf Trax Zn				
Amplify D		25,167	15.1	81.1

### **Discussion:**

Wolftrax Zn is a micronutrient that can be applied as a hopper box seed treatment. In this case, the Wolftrax was applied with Amplify-D, a seed emergence aid that is 2% nitrogen and 10% available phosphoric acid with micronutrients.

Zinc soil test levels in this field are consistently low. Levels from a sample taken in mid March 2010 were .5 ppm. However, the Virginia Tech Soil Testing Laboratory did not recommend a zinc application since soil pH levels (6.4) and P levels (24 lbs./acre) were not high. High phosphorus soil levels and high soil pH levels reduce the availability of zinc.

Weather conditions after planting were very good for plant emergence. Emergence in the Wolftrax + Amplify-D plots tended to be somewhat higher, but the difference was not statistically different. No tissue samples were taken after emergence, but no visual symptoms of zinc deficiency appeared in any treatments. There was no difference in yields. Yields were hurt by the drought of 2010.

### **Sidedress Nitrogen Injection Evaluation**

**Cooperators: Producer:** Robb Hinton

**Extension:** Matt Lewis, Northumberland/Lancaster

Previous Crop: Soybeans
Planting Date: April 6, 2010
Hybrid: Pioneer 36V75

Fertilizer: Broadcast: 60-40-80 w/ chemicals

Sidedress: treatments: 98lbs dribbled, 98lbs injected, and 85lbs dribbled on 6/2/10

**Crop Protection:** 5pt Lumax®, 1qt Atrazine®, 1qt Princep®, 2oz Tombstone®

**Harvest Date:** September 7, 2010

Rep	Treatment	% Moisture	Yield
1	98lbs injected	15.8	138
1	98lbs dribbled	15.8	124
1	85lbs injected	15.5	122
	0011 1		
2	98lbs injected	15.7	132
2	98lbs dribbled	15.6	125
2	85lbs injected	15.4	127
·			
3	98lbs injected	15.4	131
3	98lbs dribbled	15.2	133
3	85lbs injected	15.4	133
Avg	98lbs injected	15.6	133
Avg	98lbs dribbled	15.5	127
Avg	85lbs injected	15.4	127

### **Discussion:**

Robb recently began using an injector system on his applicator to place nitrogen fertilizer below crop residue and into the soil when sidedressing corn. This strategy helps to avoid both volatilization and immobilization by microbes and can significantly increase nitrogen use efficiency by corn plants. In this drought year, yields were limited by rainfall and corn had ample nitrogen to produce the yields seen in this plot. Yields were also affected by stand loss due to cold temperatures at and following germination, especially in a low area located within the plot. While the 98lbs injected treatment averaged 6 bushels higher than dribbling the same amount of nitrogen or injecting 13lbs less nitrogen, results were not statistically significant. We plan to repeat this plot in 2011, so please stay tuned.