

# 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<sup>®</sup> was evaluated as a possible solution, as well as a new product, Votivo<sup>®</sup>. In six studies, there was no advantage to the Avicta<sup>®</sup> treatments. Two studies evaluating Votivo<sup>®</sup> 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

<u>Seed Brand Name:</u>	<u>Hybrid</u>	<i>Westmoreland (Ag Expo)</i>	<i>King &amp; Queen (Carlton)</i>	<i>King &amp; Queen (Henley)</i>	<b>AVERAGE</b>
Augusta Seed Corn	A 54-57	84		114	<b>87<sup>†</sup></b>
DeKalb	DKC 52-59	94	62	123	<b>93</b>
Doeblers PA Hybrids Inc.	RPM633HXR	88	46	116	<b>83</b>
Dyna-Gro	56R29	83	46	100	<b>76</b>
Hubner Seed	6110	90	71	128	<b>96</b>
Mid-Atlantic Seeds	MA8109VT3P	85	64	124	<b>91</b>
Mycogen Seed	2K592	87	64	117	<b>89</b>
Pioneer Hi Bred Intl	35F40	90	73	127	<b>97</b>
Southern States	SS538VT3	91	77	128	<b>98</b>
Supreme EX by Seed Consultants	SCS10HQ70	85	64	118	<b>89</b>
T.A. Seeds	TA525-13V	76		106	<b>80<sup>‡</sup></b>

† 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.

‡ 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**

<b><u>Seed Brand Name:</u></b>	<b><u>Hybrid</u></b>	<i>Westmoreland (Ag Expo)</i>	<i>New Kent</i>	<i>Middlesex (Benton)</i>	<i>King &amp; Queen (Henley)</i>	<i>Dinwiddie</i>	<i>VSU</i>	<i>Chesapeake</i>	<b><u>AVERAGE</u></b>
<b>Augusta Seed Corn</b>	<b>A 54-61</b>	97	84	70	122	120	142	190	<b>118</b>
<b>DeKalb</b>	<b>DKC 62-54</b>	88	134	68	127	119	160	160	<b>122</b>
<b>Doebler's PA Hybrids Inc.</b>	<b>679GRQ</b>	87	110	66	110	119	149	165	<b>115</b>
<b>Dyna-Gro</b>	<b>57V40</b>	87	89	56	118	119		190	<b>114<sup>†</sup></b>
<b>Hubner Seed</b>	<b>5505</b>	107	106	61	131	153	155	160	<b>125</b>
<b>Mid-Atlantic Seeds</b>	<b>MA8143VT3P</b>	90	92	51	129	158	136	183	<b>120</b>
<b>Mycogen Seed</b>	<b>2E696</b>	80	103	52	110	114	131	156	<b>106</b>
<b>NK</b>	<b>N68B-3000GT</b>	89	71	75	122	127	154	169	<b>115</b>
<b>Pioneer Hi Bred Intl</b>	<b>P1184HR</b>	86	89	90	132	148			<b>127<sup>†</sup></b>
<b>Seed Consultants</b>	<b>SC11AGT30</b>	96	136	61	119	149	163	181	<b>129</b>
<b>Southern States</b>	<b>SS 684 VT3</b>	97	106	63	126	133	160	183	<b>124</b>
<b>Supreme EX by Seed Consultants</b>	<b>SCS11HQ38</b>	73	95	51	122	125	131	187	<b>112</b>
<b>T.A. Seeds</b>	<b>TA700-11</b>	93		65	125	118	137	198	<b>120<sup>†</sup></b>

† 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**

<b><u>Seed Brand Name:</u></b>	<b><u>Hybrid</u></b>	<i>Westmoreland (Ag Expo)</i>	<i>Middlesex (Gresham)</i>	<i>Dinwiddie</i>	<i>VSU</i>	<b><u>AVERAGE</u></b>
<b>Augusta Seed Corn</b>	<b>A 68-67</b>	95	92	138	151	<b>119</b>
<b>DeKalb</b>	<b>DKC 63-84</b>	92	128	139	119	<b>119</b>
<b>Doebler's PA Hybrids Inc.</b>	<b>RPM725HRQ</b>	81	84	131	130	<b>107</b>
<b>Dyna-Gro</b>	<b>57V59</b>	88	129	150	149	<b>129</b>
<b>Hubner Seed</b>	<b>5909</b>	99	88	139	143	<b>117</b>
<b>Mid-Atlantic Seeds</b>	<b>MA5160GT</b>	88	69	146	120	<b>106</b>
<b>Mycogen Seed</b>	<b>2V732</b>	94	73	144		<b>112<sup>†</sup></b>
<b>NK</b>	<b>N73V-3000GT</b>	96	61	145	149	<b>113</b>
<b>Pioneer Hi Bred Intl</b>	<b>P1456HR</b>	77	20	141	149	<b>97</b>
<b>Southern States</b>	<b>SS 749VT3</b>	73	51	142	131	<b>99</b>
<b>Supreme EX by Seed Consultants</b>	<b>SCS11HR69</b>	90	59	122		<b>97<sup>†</sup></b>
<b>T.A. Seeds</b>	<b>TA717-20</b>	89	90	139		<b>115<sup>†</sup></b>

† 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	% Moisture	Test Wt.	Yield	% of Check	Rank
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	“	17.9	60	188.8		
Northrup King N-68B	Agrisure 3000	19.5	55	168.5	94.4%	8
Check	“	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	“	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	“	17.7	61	191.2		
Doebblers 679	Agrisure 3000	17.3	56	165.4	92.7%	9
Check	“	18.1	58	173.6		
Dekalb 62-54	Yieldgard VT Triple	17.4	59	160.0	89.7%	10
Check	“	17.4	59	161.6		
Supreme EX SCS11 HQ38	RR/Herculex Xtra	19.8	60	186.8	104.7%	4
Check	“	17.9	60	158.9		
Hubner 5505	Yieldgard VT Triple	17.6	58	159.9	89.6%	11
Check	“	18.4	61	183.9		
<b>CHECK AVERAGE:</b>		<b>17.8</b>	<b>60</b>	<b>178.4</b>	<b>100%</b>	

**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 Simazine + 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
<b>Check</b>	<b>H5655</b>	<b>113</b>	<b>29,000</b>	<b>---</b> *	<b>---</b>
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
Doebler 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
<b>Check</b>	<b>H5655</b>	<b>113</b>	<b>29,000</b>	<b>11.6</b>	<b>158.8</b>
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
Doebler 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	---	---
<b>Check</b>	<b>H5655</b>	<b>113</b>	<b>29,000</b>	<b>---</b>	<b>---</b>

**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.

\*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 New Kent Mid Maturity Corn Plot

**Cooperators:**                   **Producer:**       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
<b>Check (Pioneer 33M57)</b>	<b>RR2/HX/LL</b>	<b>27,000</b>	<b>18.7</b>	<b>76.9</b>
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
<b>Check</b>	<b>RR2/HX/LL</b>	<b>29,500</b>	<b>16.2</b>	<b>44.3</b>
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
<b>Check</b>	<b>RR2/HX/LL</b>	<b>29,000</b>	<b>17.3</b>	<b>24.7</b>

**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
<b>Average Check:</b>			<b>13.4</b>	<b>66.8</b>

**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	Accelaron	13.8	39
Pioneer 36V75	RR,LL,HX	103	Accelaron	13.9	47
Dyna-Gro 55V24	VT3	102	Accelaron	13.3	50
Dyna-Gro 44SS49	SmartStax	104	Accelaron	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.





Hubner 5505	M	23,500	YieldGard VT Triple	14.2	106.6
Hubner 5909	F	28,500	YieldGard VT 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
SS 538	E	27,000	YieldGard VT Triple	14.2	90.6
SS 684	M	27,000	YieldGard VT Triple	14.9	97.2
SS 749	F	26,000	YieldGard VT Triple	16	73.1
Mid-Atlantic 8109	E	27,000	YieldGard VT Triple	15.9	85.0
Mid-Atlantic 8143	M	27,000	YieldGard VT Triple	17.6	90.4
Mid-Atlantic 5160	F	30,500	Agrisure GT	15.5	88.4
Mycogen 2K592	E	28,500	Roundup Ready, Herculex Xtra	14.4	86.5
Mycogen 2E696	M	27,000	YieldGard VT Triple, Roundup Ready Corn 2	14.7	80.2
Mycogen 2V732	F	28,000	YieldGard VT Triple, Roundup Ready Corn 2	15	93.6
TA 525-13V	E	25,000	YieldGard VT 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
Pioneer 35F40	E	29,500	Roundup Ready Corn 2, LibertyLink, Herculex 1	14.1	90.2
Pioneer 1184	M	29,000	Roundup Ready Corn 2, LibertyLink, Herculex 1	15.1	86.2
Pioneer 1456	F	27,000	Roundup Ready Corn 2, LibertyLink, Herculex 1	14.7	77.1
Average Early Hybrids					86.6
Average Mid Hybrids					90.1
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
Doelbers 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
H 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	E		24,000	14.5	114.3
Augusta 54-61	M	Agrisure GT/CB/LL	26,500	14.9	122.4
Doeblers RPM633HXR	E	RR/LL/HX1	27,500	15.0	115.5
Doeblers 679GRO	M	Agrisure 3000	24,500	12.7	110.1
Dyna-Gro 56R29	E	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	E	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	E	Genuity Smart Stax	26,000	12.1	128.0
Hubner 5505	M	Yield Gard VT Triple	24,500	13.5	130.9
Mycogen 2K592	E	RR/HXX	25,500	14.5	116.5
Mycogen 2E696	M	Yield Gard VT Triple	25,000	14.8	109.7
SS 538VT3	E	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	E	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	E	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	E	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	E	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	E	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.





### Nematode Assays:

<u>Treatment</u>	<u>Rating</u>	<u>Nematodes Present</u>
Check 1	B	Stubby Root
Cruiser 1	A	
Avicta 1	B	Dagger, Lance
Check 2	B	Lesion, Stubby Root, Lance
Cruiser 2	B	Lesion, Stubby Root, Lance
Avicta 2	B	Lesion, Stubby Root, Lance
Check 3	B	Stubby Root, Lance
Cruiser 3	A	Stubby Root
Avicta 3	A	Stubby Root
Check 4	B	Stubby Root, Lance
Cruiser 4	B	Lesion, Lance
Avicta 4	A	Root-Knot

**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:**                    **Extension:**        Matt Lewis, Northumberland/Lancaster  
  
**Previous Crop:**                Soybeans  
**Planting Date:**                April 19, 2010  
**Hybrid:**                         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
<b>Avg</b>	<b>Avicta Complete</b>	<b>15.0</b>	<b>102</b>
<b>Avg</b>	<b>Cruiser Extreme</b>	<b>14.9</b>	<b>103</b>

### Discussion:

Alan has had problems with lance nematodes in 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: 160-0-0-20 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

Treatment	Rep.	Population	% Moisture	Yield
Check	1	27,000	17.5	208
Avicta	1	27,000	16.8	199
Check	2	29,000	16.7	193
Avicta	2	28,000	17.4	187
Check	3	27,000	16.6	191
Average Check—3 reps.		27,667	15.2	194
Average Avicta—2 reps.		27,500	15.2	193

### 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 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:

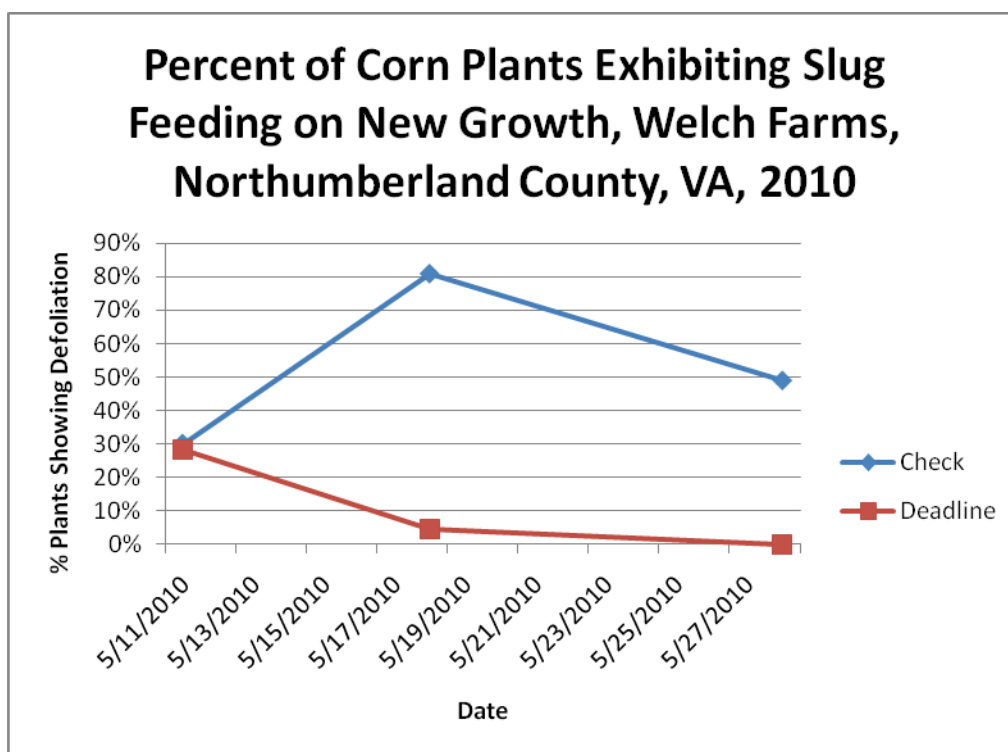
Votivo is a nematicide seed treatment. Two soil samples for nematode assay were taken on June 2nd from the plot area. One of the samples indicated a possible problem with nematodes, while the other sample indicated a nematode problem. Drought and heat stress greatly reduced yields, and yield variability 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
1	Deadline	16.2	133
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
<b>Avg</b>		<b>Deadline</b>	<b>14.6</b>
<b>Avg</b>		<b>Check</b>	<b>14.8</b>



**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.



## Sidedress Nitrogen Injection Evaluation

**Cooperators:**                   **Producer:**       Robb Hinton  
**Extension:**                   **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
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
<b>Avg</b>	<b>98lbs injected</b>	<b>15.6</b>	<b>133</b>
<b>Avg</b>	<b>98lbs dribbled</b>	<b>15.5</b>	<b>127</b>
<b>Avg</b>	<b>85lbs injected</b>	<b>15.4</b>	<b>127</b>

### 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.