



**Virginia Cooperative Extension**

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**2019**

# **Virginia On-Farm Corn**

## **Test Plots**



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



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The research and demonstration plots discussed in this publication are a cooperative effort by Virginia Cooperative Extension employees, the Northern Neck & Three Rivers Soil and Water Conservation Districts, the Natural Resources Conservation Service, numerous producers, and many members of the Virginia agribusiness community. The fieldwork and printing of this publication are mainly supported by the Virginia Corn Check-Off Fund through the Virginia Corn Board. This is the twenty-eighth year of this multi-county cooperative project. Further work is planned for 2020. Anyone who would like a copy of this publication should contact their local extension agent, who can request a copy from the VCE Northumberland County Extension Office.



Producers interested in becoming involved with on-farm plot work, and those with research topic ideas that they would like to have investigated in future on-farm publications should contact their local extension office for further information.

The authors wish to thank the many producers and agribusinesses that participated in these research and demonstration plots. This publication is made possible by their continued support and cooperation.

*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 demonstrations and replicated studies provide information that can be used by Virginia corn growers to make better management decisions on their farm. These results should be used along with data from other replicated studies when making decisions. Refer to individual location results for additional detail.

## **Hybrid Comparisons**

Corn hybrid selection remains a challenge for Virginia producers. With more seed companies, and more GMO options and seed treatment packages than ever before, hybrid selection can be a difficult decision. We evaluated early maturity hybrids (107 day RM or less) at four locations, medium maturity hybrids (108-112 day RM) at eight locations, and full season hybrids (113 day RM or more) at eight locations. Additionally, the Virginia Ag Expo location in Caroline County planted hybrids from all three maturity groups. Farmers should use the results compiled from these studies to assist with future hybrid selection; however, they should continue to plant hybrids of multiple maturities to help spread production risk.

## **Cover Crop Evaluation**

We continue to evaluate legume and cover crop options in corn production. Our work continues to demonstrate that legume cover crop options can provide significant nitrogen to the subsequent corn crop. Hairy vetch and austrian winter pea, in particular, show great promise in increasing Virginia corn yields.

**Early Maturity Hybrid Entries**  
**107 Day RM or Less**

<b>Brand</b>	<b>Hybrid Entry</b>	<b>Relative Maturity</b>	<b>Seed Treatment and Rate</b>	<b>Genetic Traits</b>
Hubner Seed	H04G287	104	Acceleron P250	VT2PDGRIB
Pioneer	P0339AM	103	Poncho 1250 Votivo	95% (YGCB, HXI, LL, RR2) 5% (LL, RR2)
Dekalb	DKC55-85RIB	105	Acceleron Basic	GENVT2PRIB
Dyna Gro	DG44VC36RIB	104	Acceleron 250	Double Pro
Local Seed Company	LC0877 VT2P	107	Radius 500	YGCB, RR
Syngenta NK Seeds	NK0472-3110	104	Avicta Complete 250 + Vibrance	RR, Broad Lep 1, Corn Borer 1
Channel	205-63VT2P	105	Acceleron P250	VT2P
Croplan	4020VT2	100	250 Standard	Double Pro, RR

## Early Maturity Hybrid Comparisons 107 Day RM or Less

Company	Hybrid	Maturity	Virginia Ag Expo	Caroline	Essex	Virginia State University	Chesapeake/Virginia Beach	Average
Hubner Seed	H04G287	104	192.0	119.3		121.6	187.5	155.1
Pioneer	P0339AM	103	202.6	116.7	156.1	131.3	194.9	160.3
Dekalb	DKC55-85RIB	105	213.8	133.5	162.1	132.6	218.9	172.2
Dyna Gro	DG44VC36RIB	104	184.4	139.9	134.7	120.5	191.9	154.2
Local Seed Company	LC0877 VT2P	107	171.5	131.9	153.8	126.4	200.9	156.9
Syngenta NK Seed	NK0472-3110	104	177.3	121.0	135.6	110.5	175.7	144
Channel	205-63VT2P	105	202.5					
Croplan	4020VT2	100	190.9					
	<b>Average</b>		191.9	127.0	148.5	128.8	181.7	

\*Overall yield averages were made for hybrids entered at all locations. Error at harvest resulted in the loss of yield data for one hybrid at the Essex location. This hybrid was still included in the overall yield average.

## Virginia Ag Expo Early Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Charity Hill Farm; Steve & Chris Smith  
**Extension:** M. Broaddus, W. Thomason, T. Jones  
**Industry:** Channel Seed (Jim Oliver), Nutrien (Eugene Longest),  
and various seed suppliers

**Previous Crop:** Alfalfa / Orchardgrass hay  
**Soil Type:** 11B Kempsville / Emporia Complex 0 - 2 % slopes  
**Tillage:** No-Till  
**Planting Date:** April 16, 2019  
**Planting Equipment:** White 6180 planter, 12 row  
**Seeding Rate:** 29,500 seed per acre  
**Row Spacing:** 30”  
**Fertilizer:**                   **Preplant:**                   170-52-100

**Crop Protection:**           **Burndown:**               Roundup 32oz, Acuron 5.5pt; Atrazine 1pt;  
Princep 1qt; Tombstone 2oz; LI700 1qt/100gal  
**Post Emergence:** Roundup PM 32oz; Trivapro 13.7oz + 1-gallon  
Maximun Npact @ tassel

**Harvest Date:** August 30, 2019  
**Harvest Equipment:** New Holland CR9040 combine w/ 6 row New Holland header

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Channel 208-23 (CHECK)		19.2	201.5
Pioneer P0339AM	103	18.2	202.6
Channel 205-63VT2P	105	16.8	202.5
Dekalb DKC55-85RIB	105	17.8	213.8
Croplan 4020VT2	100	16.4	190.9
Dynagro DG44VC36RIB	104	17.4	184.4
Dekalb DKC55-85RIB	105	17.7	205.8
Hubner H04G287	104	17.8	205.1
Syngenta NK Seeds NK0472-3110	104	17.4	177.3
Hubner H04G287	104	17.3	192.0
Local LC0877 VT2P	107	18.4	171.5
Channel 208-23 (CHECK)		19.7	144.8

## Virginia Ag Expo Early Maturity Corn Hybrid Comparison

**Discussion:** Although all varieties yielded very well, it was noticed that 10 of the top yielding 11 varieties were located in the middle of the plot. Two feasible explanations may explain: 1) the middle of the plot contained mid-season varieties, which the season favored, and, 2) this area was also composed of a lower lying area that the outer thirds did not, theoretically allowing these hybrids to receive more groundwater during the drier than normal July. This is also supported by the middle two checks being higher in yield than the outer two.

## Cities of Chesapeake/Virginia Beach Early Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Frank Brickhouse  
**Extension:** Watson Lawrence & Roy Flanagan

**Previous Crop:** Soybeans  
**Soil Type:** Acredale Silt Loam  
**Tillage:** Ridge Type Conventional Tillage  
**Planting Date:** May 14, 2019  
**Planting Equipment:** 7300 JD Maxi Merge Vacuum Planter 12 rows  
**Seeding Rate:** 35,000 Seeds / Acre  
**Row Spacing:** 30"

**Fertilizer:**                   **Preplant:** Broadcast 600 lbs./A 15-8-15 + 13.5 lbs. S/A  
**Planting:** 30 Gal. 32% (110 lbs. N) + Excelis Max. 4.8 oz./acre

**Crop Protection:**           **Burndown:** 1qt. Roundup/A + 1 qt. 2,4-D/A + Kingpin Surfactant 1 pt./100 gal  
**Post Emergence:** 16 oz. Roundup/A + 1 qt. Atrazine/A + 3 oz. Laudis/A + Kingtide Surfactant 1 pt./100 gal.

**Harvest Date:** October 3, 2019  
**Harvest Equipment:** JD 9860

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Pioneer P0339AM	103	15.6	194.9
Dyna Gro D44VC36 RIB	104	15.4	191.9
Check (DKC 69-16)	119	16.6	246.9
Hubner H04G287	104	15.3	187.5
Syngenta NK Seeds NK 0472-3100	104	15.7	175.7
Check (DKC 69-16)	119	16.4	241.9
Dekalb DKC 55-85 RIB	105	15.3	218.9
Augusta 4657-3200 GTEZ	107	16.0	217.1
Check (DKC 69-16)	119	16.4	225.2
Local Seed LC0877 VT2P	108	15.6	200.9

## Virginia State University Early Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Ruddy Grammar & Mack West, VSU-Randolph Farm  
**Extension:** Glenn F. Chappell, II, Virginia State University

**Previous Crop:** Full Season Soybeans  
**Soil Type:** Tetotum  
**Planting Date:** April 24, 2019  
**Seeding Rate:** 24,625 Seeds / Acre  
**Fertilizer:**                   **Preplant:** Broadcast: 32-0-0 Liquid w/ Burndown, April 17, 2019  
    **Planting:** Broadcast: 30-60-90 Granular, April 22, 2019  
    **Sidedress:** 130-0-0 UAN June 3, 2019

**Crop Protection:**           **Burndown:** 1 qt. Graxomone SL April 17, 2019  
    **Planting:** 2 qt. Bicept II Mag. + 1 qt. Princep 4L April 25, 2019

**Harvest Date:** September 26, 2019  
**Harvest Equipment:** John Deere 9560 STS

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)	% of Check
Dekalb DKC67-44RIB	117	13.3	133.2495	-----
Hubner Seed H04G287	104	13	121.6395	88.06595
Pioneer P0339AM	103	12.9	131.3078	95.06575
Dekalb DKC55-85RIB	105	12.8	132.6219	96.01715
Dyna Gro DG44VC36RIB	104	13	120.4788	87.22563
Local Seed Company LC0877 VT2P	107	12.6	126.3964	91.50993
Syngenta NK Seeds NK0472-3110	104	13	110.4969	79.99884
Dekalb DKC67-44RIB	117	13.7	142.9968	-----

**Discussion:** No irrigation was applied. The plot received 7.05" of rainfall from planting until July 7<sup>th</sup> with 52% of this rainfall occurring in the first ten days of June. After July 7<sup>th</sup>, only traces of rain were received. Based on information from extension, (<https://articles.extension.org/pages/14080/corn-water-requirements>) a high-yielding corn crop requires about 22" of water, with a range of 20 to 25". About 15-16" of water is enough to produce a low yield, but that depends on when during the season the water is available or unavailable. The "% of Check" is calculated by dividing an individual hybrid's yield by the average of the two closest check hybrids and multiplying by 100.

## Essex County Early Maturity Corn Hybrid Comparison

**Cooperators:** **Producer:** Walnut Spring Farm  
**Extension:** Robbie Longest, VCE-Essex  
**Industry:** Participating Companies

**Previous Crop:** Soybeans  
**Soil Type:** Kempsville Sandy Loam  
**Tillage:** No-Till  
**Planting Date:** April 18, 2019  
**Planting Equipment:** Kinze 3500 8 row planter  
**Row Spacing:** 30”  
**Fertilizer:** **Preplant:** 100 lb/ac K  
**Planting:** 4 gal/ac of 6.6-20.8-3.2  
**Sidedress:** 125.55 lb/ac N

**Crop Protection:** **Burndown:** Gramoxone (3pt/ac), Atrazine (1 qt/ac), Balance-Flex (5 oz/ac)  
**Post Emergence:** Atrazine (1 qt/ac), Cornerstone (1 qt/ac), Capreno (3 oz/ac), Stratego (2 oz/ac), Class Act (1 pt/ac)

**Harvest Date:** September 23, 2019  
**Harvest Equipment:** New Holland TR88 w/ 6 Row Header

Hybrid	Maturity (Days)	Stand* (plants/A)	% Moisture	Yield (bu./A @15.5%)
Check (Hubner 04G287) (1)	104	28,300	12.7	142.9
Syngenta NK0472-3110	104	30,000	13.1	135.6
Check (2)	104	28,600	12.7	139.4
Local Seed Co. LC0877 VT2P	107	31,300	13.0	153.8
DynaGro DG44VC36 RIB	104	33,000	13.1	134.7
Check (3)	104	32,000	13.2	143.6
Dekalb DKC55-85 RIB	105	29,300	12.8	162.1
Pioneer P0339 AM	103	28,300	12.8	156.1
Check (4)	104	32,600	N/A**	N/A**
Hubner H04G287	104	28,300	N/A**	N/A**
<b>AVERAGE</b>		<b>30,170</b>	<b>12.9</b>	<b>146.0</b>

\*Stand counts taken on 5/13/19 and the value is the average of three stand measurements per hybrid.

\*\* Due to an issue at harvesting, data could not be collected on these plots.



## Essex County Early Maturity Corn Hybrid Comparison

**Discussion:** Many thanks to Walnut Spring Farm for their cooperation in this On-Farm Corn Hybrid Plot in Essex County. Hybrids in this early plot ranged from 103-107 day maturity. Test weights ranged from 56.6 – 60.7 lb/bu. There was an issue at harvest in which data was lost for the hybrid Hubner H04G287 plot, however this hybrid was used as the check in this plot, therefore please refer to the check plot data for this hybrid. Use these results and results from other replicated yield data when considering hybrid choice for 2020.

## Caroline County Early Maturity Corn Hybrid Comparison

**Cooperators:**                    **Producer:** Airy Hill Farm  
**Extension:** M. Broaddus, T. Jones, S. Romelczyk  
**Industry:** Depicted Seed Distributors

**Previous Crop:** Full Season Soybean  
**Soil Type:** 11B Kempsville/Emporia Complex  
**Tillage:** No-till  
**Planting Date:** April 5, 2019  
**Planting Equipment:** International Harvester Cyclo-Air 800 12 row  
**Seeding Rate:** 32,000 Seed / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                    **Preplant:** 140 #N/ac Biosolids; 40-60-80 via dry  
    **Planting:** 60#N/ac UAN w/ burndown  
**Crop Protection:**           **Planting:** 1 qt. Glyphosate / ac w/ surfactant; 1 qt. Harness Extra; 1  
    pt. Atrazine  
**Harvest Date:** September 18, 2019  
**Harvest Equipment:** IH 1660 w/ 6 row corn header

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Channel 197-31VT2RIB (CHECK)	97	14.0	127.6
Dyna Gro D4VC36RIB	104	14.5	139.3
Northrup King 0472-3110	104	14.6	121.0
Local LC0887VT2P	108	14.9	131.9
Pioneer P0339AM	103	14.6	116.7
Hubner H04G287	104	14.4	119.3
Dekalb DKC55-85RIB	105	13.9	133.5
Channel 197-31VT2PRIB (CHECK)	97	13.3	126.0

**Discussion:** This particular plot yielded well considering the very spotty and small rainstorms Virginia experienced in 2019. The area where this particular plot was located received only 0.3 inches of rain in July, when a lot of these varieties were pollinating. It is believed that the preceding winter cover crop of deep tillage radish, red clover, and rye that this plot was planted into provided water holding capabilities to the crop during the hot, dry month of July, and so did much better than predicted.

## 2019 Virginia Ag Expo Corn Hybrid Comparison Plot

Photo by Mike Broaddus



**Mid Maturity Hybrid Entries**  
**108-112 Day RM**

<b>Brand</b>	<b>Hybrid Entry</b>	<b>Relative Maturity</b>	<b>Seed Treatment and Rate</b>	<b>Genetic Traits</b>
Hubner Seed	H4563RC2P	111	Acceleron P250	VT2PDGRIB
Pioneer	P1197AM	111	Poncho 1250 Votivo	95% (YGCB, HXI, LL, RR2) 5% (LL, RR2)
Dekalb	DKC62-53RIB	112	Acceleron Basic + Nemastrike	GENVT2PRIB
Dyna Gro	DG52VC63RIB	112	Acceleron 250	Double Pro
Progeny Ag Products	1712VT2P	112	A1250	VT2P
Local Seed Company	LC1289 VT2P	112	Radius 500	YGCB, RR
Syngenta NK Seeds	NK0968-3330	109	Avicta Complete 500 + Vibrance	RR, Broad Lep 2, Corn Borer 2
Channel	209-15VT2P	109	Acceleron P250	VT2P
Croplan	5073SS/RIB	110	250 Standard	Smart Stax, RR

## Mid Maturity Hybrid Comparisons 108 - 112 Day RM

Company	Hybrid	Maturity	Virginia Ag Expo	Lancaster	Westmoreland	Middlesex	Southampton	King and Queen	Virginia State University	Chesapeake / Virginia Beach	Average
Hubner Seed	H4563RC2P	111	209.7	169.9	184.0	129.4	148.1	185.6	121.0	121.2	158.6
Pioneer	P1197AM	111	209.6	172.6	168.0	146.2	150.4	188.9	105.3	184.2	165.7
Dekalb	DKC62-53RIB	112	221.3	173.7	198.0	145.5	155.4	193.2	137.5		181.3
Dyna Gro	DG52VC63RIB	112	214.3	179.8	185.0	181.6	170.1	191.5	130.9	226.1	184.9
Progeny Ag Products	1712VT2P	112	218.1	183.9	195.0	189.4	171.4	189.2	138.4	178.7	183.0
Local Seed Company	LC1289 VT2P	112	211.1	183.8	172.0	196.2	157.9	189.2	138.9	156.7	175.7
Syngenta NK Seed	NK0968-3330	109	182.7	151.0	159.0	165.7	137.2	145.7	94.9	210.0	155.8
Channel	209-15VT2P	109	213.3								
Croplan	5073SS/RIB	110	212.3								
		<b>Average</b>	<b>210.3</b>	<b>173.5</b>	<b>180.1</b>	<b>164.9</b>	<b>155.8</b>	<b>183.3</b>	<b>123.8</b>	<b>186.1</b>	

## Virginia Ag Expo Mid Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Charity Hill Farm; Steve & Chris Smith  
**Extension:** M. Broaddus, W. Thomason, T. Jones  
**Industry:** Channel Seed (Jim Oliver), Nutrien (Eugene Longest),  
 and various seed suppliers

**Previous Crop:** Alfalfa / Orchardgrass hay  
**Soil Type:** 11B Kempsville / Emporia Complex 0 - 2 % slopes  
**Tillage:** No-Till  
**Planting Date:** April 16, 2019  
**Planting Equipment:** White 6180 planter, 12 row  
**Seeding Rate:** 29,500 Seed / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                               **Preplant:** 170-52-100

**Crop Protection:**                   **Burndown:** Roundup 32oz, Acuron 5.5pt; Atrazine 1pt;  
 Princep 1qt; Tombstone 2oz; LI700 1qt/100gal  
**Post Emergence:** Roundup PM 32oz; Trivapro 13.7oz + 1 gallon  
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**Harvest Date:** August 30, 2019  
**Harvest Equipment:** New Holland CR9040 combine w/ 6 row New Holland header

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Channel 208-23 (CHECK)		19.1	186.8
Local LC1289 VT2P	112	19.1	211.1
Channel 209-15VT2P	109	18.8	213.3
Syngenta NK Seeds NK0968-3330	109	19.1	182.7
Hubner H4563RC2P	111	21.1	209.65
Progeny PGExp1712VT2P	112	19.4	218.1
Croplan 5073SS/RIB	110	19.2	212.3
Dekalb DKC62-53RIB	112	20.0	221.3
Pioneer P1197AM	111	18.6	209.63
Dekalb DKC62-53RIB	112	20.6	233.3
Hubner H4563RC2P	111	21.7	215.6
Dynagro DG52VC63RIB	112	20.2	214.3
Channel 208-23 (CHECK)		19.2	201.5

## Virginia Ag Expo Mid Maturity Corn Hybrid Comparison

**Discussion:** Although all varieties yielded very well, it was noticed that 10 of the top yielding 11 varieties were located in the middle of the plot. Two feasible explanations may explain: 1) the middle of the plot contained mid-season varieties, which the season favored, and, 2) this area was also composed of a lower lying area that the outer thirds did not, theoretically allowing these hybrids to receive more groundwater during the drier than normal July. This is also supported by the middle two checks being higher in yield than the outer two.



## Cities of Chesapeake/Virginia Beach Mid Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Frank Brickhouse  
    **Extension:** Watson Lawrence & Roy Flanagan

**Previous Crop:** Soybeans  
**Soil Type:** Acredale Silt Loam  
**Tillage:** Ridge Type Conventional Tillage  
**Planting Date:** May 14, 2019  
**Planting Equipment:** 7300 JD Maxi Merge Vacuum Planter 12 rows  
**Seeding Rate:** 35,000 Seeds / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                   **Preplant:** Broadcast 600 lbs. 15-8-15 + 13.5 lbs. S  
    **Planting:** 30 Gal. 32% (110 lbs. N) + Excelis Max. 4.8 oz./acre  
**Crop Protection:**       **Burndown:** 1qt. Roundup/A + 1 qt. 2,4-D/A + Kingpin Surfactant 1 pt./100 gal  
    **Post Emergence:** 16 oz. Roundup/A + 1 qt. Atrazine/A + 3 oz. Laudis/A + Kingtide Surfactant 1 pt./100 gal.  
**Harvest Date:** October 3, 2019  
**Harvest Equipment:** JD 9860

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Syngenta NK Seed NK 0968-3330 EZ1	109	15.3	208.0
Check (DKC 69-16)	119	16.6	233.0
Syngenta A1059-3110 GTDA	109	15.9	210.0
Hubner H4563 RC2P	111	15.5	121.2
Check (DKC 69-16)	119	16.6	233.7
Check (DKC 69-16)	119	15.7	206.7
Pioneer P1197 AM	111	15.9	184.2
Dyna Gro DG-52-VC63 RIB	112	16.7	226.1
Check (DKC 69-16)	119	15.6	174.9
Progeny 1712 VT2P	112	15.8	178.7
Dekalb DKC 63-57	113	16.8	162.7
Check (DKC 69-16)	119	15.9	206.5
Local Seed LC1289 VT2P	112	16.3	156.7
Dekalb DKC 63-57	113	17.1	216.4
Check (DKC 69-16)	119	16.0	181.8
Dekalb DKC 67-44	117	17.0	173.9
Dekalb DKC 68-69	118	16.9	177.4



## Middlesex County Mid Maturity Corn Hybrid Comparison

**Cooperators:**                    **Producer:** Robert Bland RT Bland, INC.  
**Extension:** M. Rachael Miller- Middlesex VCE

**Previous Crop:** Soybeans  
**Soil Type:** Emporia Sandy Loam  
**Tillage:** No-Till  
**Planting Date:** May 1, 2019  
**Planting Equipment:** John Deere 1750, MAX-Emerge Plus  
**Seeding Rate:** 30,000 Seed / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                    **Preplant:** 70-30-60-12s

**Sidedress:** 90lbs/N2/AC

**Crop Protection:**            **Burndown:** 1 Qt. Round Up  
1 Qt. Atrazine  
1 Qt. Simazine  
10 oz. 2, 4-D  
**Post Emergence:** 3.6 Pt. Halex GT  
1Pt. Atrazine

**Harvest Date:** September 23, 2019

**Harvest Equipment:** Gleaner R52 Combine

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Hubner H4563RC2P	111	15.0	129.41
Pioneer P1197AM	108	15.3	146.17
Dekalb DKC62-53RIB	112	15.4	145.50
Dyna Gro DG52VC63RIB	112	15.3	181.59
Progeny 1712VT2P	112	14.7	189.41
Local Seed Company LC1289VT2P	112	14.7	196.16
Syngenta NK0968-3330	109	14.5	165.68
Agrisurs A1059-3110GT DA	111	14.4	154.53
Average of Check (Seed Consultants)	111	14.9	168.90

## Virginia State University Mid Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Ruddy Grammar & Mack West, VSU-Randolph Farm  
**Extension:** Glenn F. Chappell, II, Virginia State University

**Previous Crop:** Full Season Soybeans  
**Soil Type:** Tetotum  
**Planting Date:** April 24, 2019  
**Seeding Rate:** 24,625 Seed / Acre  
**Fertilizer:**                   **Preplant:** Broadcast: 32-0-0 Liquid w/ burndown, April 17, 2019  
    **Planting:** Broadcast: 30-60-90 Granular, April 22, 2019  
    **Sidedress:** 130-0-0 UAN June 3, 2019

**Crop Protection:**           **Burndown:** 1 qt. Graxomone SL April 17, 2019  
    **Planting:** 2 qt. Bicept II Mag. + 1 qt. Princep 4L April 25, 2019

**Harvest Date:** September 26, 2019  
**Harvest Equipment:** John Deere 9560 STS

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)	% of Check
Dekalb DKC67-44RIB	117	13.7	142.9	-----
Hubner Seed H4563RC2P	111	13.6	121.03	84.36731
Pioneer P1197AM	111	13.1	105.3	73.37984
Dekalb DKC62-53RIB	112	12.8	137.5	95.85287
Dyna Gro DG52VC63RIB	112	13	130.9	91.264
Progeny Ag Products 1712VT2P	112	13.1	138.4	96.49288
Local Seed Company LC1289 VT2P	112	12.8	138.9	96.826
Syngenta NK Seeds NK0968-3330	109	13	94.9	66.18258
Dekalb DKC67-44	117	13.7	153.6	131.6217
Dekalb DKC67-44RIB	117	13.7	143.9	-----

**Discussion:** No irrigation was applied. The plot received 7.05" of rainfall from planting until July 7<sup>th</sup> with 52% of this rainfall occurring in the first ten days of June. After July 7<sup>th</sup>, only traces of rain were received. Based on information from extension, (<https://articles.extension.org/pages/14080/corn-water-requirements>) a high-yielding corn crop requires about 22" of water, with a range of 20 to 25". About 15-16" of water is enough to produce a low yield, but that depends on when during the season the water is available or unavailable. The "% of Check" is calculated by dividing an individual hybrid's yield by the average of the two closest check hybrids and multiplying by 100.

## Westmoreland County Mid Maturity Corn Hybrid Comparison

<b>Cooperators:</b>	<b>Producer:</b> F.F. Chandler, Jr. and Louis Chandler
	<b>Extension:</b> Stephanie Romelczyk, ANR – Westmoreland Trent Jones, ANR – Northumberland/Lancaster Ahmerah Thompson, VCE Intern
	<b>Industry:</b> Participating Seed Company Representatives
<b>Previous Crop:</b>	Soybeans
<b>Soil Type:</b>	Suffolk sandy loam
<b>Tillage:</b>	No-till
<b>Planting Date:</b>	April 18, 2019
<b>Planting Equipment:</b>	Case IH 950 Cyclo Planter
<b>Seeding Rate:</b>	30,000 Seed / Acre
<b>Row Spacing:</b>	30”
<b>Fertilizer:</b>	<b>Preplant:</b> 30-30-60-5S broadcast
	<b>Planting:</b> 40-20-0-5S-0.5 Zn-0.25 B banded
	<b>Sidedress:</b> 100-0-0-12S broadcast dry w/ nitrain stabilizer
<b>Crop Protection:</b>	<b>Preplant:</b> Gramoxone 3 pts/A + Scanner ¾ pt/A + Acuron 1.5 qts/A + Princep 1.5 pts/A + Tombstone 1.5 oz/A + Sharpen 1 oz/A
	<b>Post Emergence:</b> Halex 3.6 pts/A + Atrazine 1 qt/A + Li 700 1 qt/100 gal + Radiate 2 oz/A
<b>Harvest Date:</b>	September 5, 2019
<b>Harvest Equipment:</b>	John Deere 9400

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Hubner H4563RC2P	111	17.5	184
DynaGro DG52VC63RIB	112	16.6	185
Progeny Ag 1712VT2P	112	16.6	195
Syngenta NK Seeds NK0968-3330	109	15.0	159
Dekalb DKC62-53RIB	112	17.0	198
Pioneer P1197AM	111	16.1	168
Local Seed Co LC1289 VT2P	112	16.4	172

**Discussion:** All tested varieties yielded well. Total rainfall between planting date and harvest date was 18.25 inches (April: 1.22 in, May: 3.54 in, June: 5.69 in, July: 3.44 in, August: 4.36, September: 0.00).

## King and Queen County Mid Maturity Corn Hybrid Comparison

**Cooperators:**                    **Producer:** Holly Ridge Farms – Bruce Taylor  
**Extension:** Robbie Longest, VCE-Essex

**Previous Crop:** Soybeans followed by a rye cover crop  
**Soil Type:** Craven and State Fine Sandy Loam, Bojac Loamy Sand  
**Tillage:** No-Till  
**Planting Date:** April 24, 2019  
**Planting Equip.:** John Deere 12 Row Planter (30" rows)  
**Fertilizer:**                    **Pre-plant:** (dry) #133 K, #77 MAP, #66 ProGyp  
**Burndown:** #47 N as 30%  
**Sidedress:** #100 N w/ Borosol as 24-0-0-3 on 5/29/19

**Crop Protection:**          **Burndown:** Gramoxone (1.5 qt/ac), Bicep (1 qt/ac), Explorer (3 oz/ac),  
Salvo (8 oz/ac),  
**Post-Emergence:** Halex GT (3.6 pt/ac), Atrazine (1 qt/ac) on 5/22/19  
**Insecticide/Fungicide:** Tombstone (2 oz/ac) @ burndown,  
Sniper (5oz w/ 3 gal water/ac) @ planting

**Harvest Date:**                    September 3, 2019  
**Harvest Equipment:** John Deere S670 w/ 6 row Header

Hybrid	Maturity (Days)	Stand* (plants/A)	% Moisture	Yield (bu./A @15.5%)
Hubner H4563 RC2P	111	26,700	19.5	185.6
Check (Axis 62A28 RIB) (1)	112	28,300	18.5	201.5
Pioneer 1197AM	111	28,300	17.5	188.9
Check (2)	112	28,000	18.2	201.5
Dekalb DKC62-53 RIB	112	27,700	18.2	193.2
Check (3)	112	29,300	18.4	194.7
DynaGro DG52VC63 RIB	112	27,300	18.0	191.5
Check (4)	112	29,000	17.6	200.2
Progeny 1712 VT2P	112	28,700	17.9	189.2
Check (5)	112	29,000	17.9	189.6
Local Seed Co. LC1289 VT2P	112	29,000	17.2	189.2
Check (6)	112	29,000	18.5	188.5
Syngenta NK Seeds NK0968-3330	109	27,700	17.4	145.7
Check (7)	112	27,700	17.4	190.0
<b>AVERAGE</b>		<b>28,264</b>	<b>18.0</b>	<b>189.2</b>

\*Stand counts taken on 6/3/19 and the value is the average of three stand measurements per hybrid.

## King and Queen County Mid Maturity Corn Hybrid Comparison

**Discussion:** Many thanks to Holly Ridge Farms for their cooperation in this On-Farm Corn Hybrid Plot in King and Queen County. This plot had an outstanding spring with good final stand populations and great early season growth. Despite drier weather and stress during crucial growth stages in late June through early July, this plot had excellent yields for dryland corn with several plots exceeding 200 bu/ac. Hybrids in this plot ranged from 109-112 day maturity. Test weights ranged from 56.4 - 60.9 lb/bu. Use these results and results from other replicated yield data when considering hybrid choice for 2020.



Holly Ridge Farms mid-maturity corn hybrid plot (June 2019).



## Lancaster County Mid Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Jock Chilton, Sam Greenstreet  
**Extension:** Trent Jones, VCE Northumberland & Lancaster  
**Industry:** Hunter Sanders - Hubner Seed

**Previous Crop:** Soybeans  
**Soil Type:** Woodstown Fine Sandy Loam  
**Tillage:** No-Till  
**Planting Date:** April 24, 2019  
**Planting Equipment:** Kinze 3200  
**Seeding Rate:** 28,000 Seed / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                   **Preplant:** 40 lb. 28-0-0-5  
    **Planting:** 15-15-0 + ½ lb. Boron + ½ lb. Zinc  
    **Sidedress:** 100 lbs. N

**Crop Protection:**           **Burndown:** 3pt. Gramoxone, 1qt. Atrazine, 2.5oz. Zidua SC  
    **Post Emergence:** May– 32oz. Roundup Power Max, 16oz.  
   Armazon Pro, 2oz. Priaxor  
   July (Aerially Applied)– 12oz. Avaris 2XS, 1gal.  
   Coron 25-0-0-.5B, 2oz. Sultrus

**Harvest Date:** September 9, 2019  
**Harvest Equipment:** John Deere S660

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
DynaGro DG52VC63RIB	112	17.3	179.8
Progeny Ag 1712VT2P	112	18.1	183.9
Pioneer P1197AM	111	16.7	172.6
Hubner H4563RC2P	111	18.4	169.9
Local Seed Company LC1289VT2P	112	18.0	183.8
Dekalb DKC62-53RIB	112	18.5	173.7
Syngenta NK0968-3330	109	18.5	151.0

## Southampton County Mid Maturity Corn Hybrid Comparison

**Cooperators:**                    **Producer:** D&J Farms, Dennis & Denton Spruill  
     **Extension:** Joshua Holland, VCE Southampton

**Previous Crop:** Peanuts  
**Soil Type:** Slagle, Fine Sandy Loam  
**Tillage:** Strip-Till  
**Planting Date:** 4/18/19  
**Planting Equipment:** KMC 8-Row Strip-Till Rig, John Deere 7300 MaxEmerge Planter  
**Seeding Rate:** 28,000 Seed / Acre  
**Row Spacing:** 36"

**Fertilizer:**                    **Preplant:** 2.25 tons Poultry Litter  
     **Planting:** 17-17-0 2x2 band @ 12 gal./acre  
     **Sidedress:** 30-0-0 @ 120 units

**Crop Protection:**            **Burndown:** 32 oz. Roundup, 1 qt. 2,4-D, 2 oz. Valor  
     **Post Emergence:** 3.6 qt. Halex GT, 2 qt. Atrazine

**Harvest Date:** September 9, 2019  
**Harvest Equipment:** John Deere 9760 Grain Combine

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
CHECK		14.3	173.7
Hubner H4563 RC2P	111	13.7	148.1
Pioneer P1197AM	111	13.3	150.4
Dekalb DKC62-53RIB	112	13.1	155.4
DynaGro DG52VC63RIB	112	13.7	170.1
Progeny 1712 VT2P	112	13.7	171.4
Local Seed LC1289 VT2P	112	13.7	157.9
Syngenta NK Seeds NK0968-3330	109	14.7	137.2
Dekalb DKC63-57RIB	113	13.9	175.8
CHECK		14.2	195.8

**Discussion:** Conditions in the field were favorable from planting through the end of May for a high yield environment. An extremely wet June, coupled with a dry July and August did not help yields across all varieties. Overall, yields were good considering the weather challenges that were faced. Fertility and weed control were timed nicely to provide all hybrids with the necessary inputs needed to achieve high yields.

**Full Maturity Hybrid Entries**  
**108-112 Day RM**

<b>Brand</b>	<b>Hybrid Entry</b>	<b>Relative Maturity</b>	<b>Seed Treatment and Rate</b>	<b>Genetic Traits</b>
Hubner Seed	H4846RC2P	118	Acceleron P250	VT2PDGRIB
Pioneer	P1870AM	118	Poncho 1250 Votivo	95% (YGCB, HXI, LL, RR2) 5% (LL, RR2)
Dekalb	DKC70-27RIB	120	Acceleron Elite + Nemastrike	GENVT2PRIB
Dyna Gro	DG58VC65RIB	118	Acceleron 250	Double Pro
Progeny Ag Products	1850VT2PDG	115	A1250	VT2P-DG
Local Seed Company	LC1488	114	Radius 500	YGCB, RR
Syngenta NK Seeds	NK1573-3330	115	Avicta Complete 500 + Vibrance	RR, Broad Lep 2, Corn Borer 2
Channel	217-76	117	Acceleron P250 + B300 + Nemastrike	VT2P
Croplan	5678VT2	116	250 Standard	Double Pro, RR



### Full Maturity Hybrid Comparisons 113 Day RM or More

Company	Hybrid	Maturity	Virginia Ag Expo	Prince George	Culpeper	Mecklenburg / Lunenburg	Southampton	Dinwiddie	Appomattox	Virginia State University	Average
Hubner Seed	H4846RC2P	118	202.6	184.7	131.2	96.9	191.5	163.4	155.2	134.9	157.6
Pioneer	P1870AM	118	168.2	176.4	108.1	124.5	176.4	136.4	144.6	110.6	143.2
Dekalb	DKC70-27RIB	120	182.3	178.7	123.6	122.9	185.7	145.2	152.8	124.9	152.0
Dyna Gro	DG58VC653RIB	118	175.1	181.6	110.2	126.9	183.6	136.1	164.5	135.2	151.7
Progeny Ag Products	1815VT2PDG	115	190.9	187.6	116.8	129.1	188.7	168.0	154.8	143.8	106.0
Local Seed Company	LC1488 VT2P	114	197.1	166.6	125.8	123.7	157.8	164.0	125.6	116.7	147.2
Syngenta NK Seed	NK1573-3330	115	174.5	147.9	100.7	128.8	138.5	151.2	141.1	113.3	137.0
Channel	217-76	117	204.3								
Croplan	5678VT2	116	201.8								
		<b>Average</b>	188.5	174.8	116.6	121.8	174.6	152.0	148.4	125.6	

## Virginia Ag Expo Full Maturity Corn Hybrid Comparison

**Cooperators:** **Producer:** Charity Hill Farm; Steve & Chris Smith  
**Extension:** M. Broaddus, W. Thomason, T. Jones  
**Industry:** Channel Seed (Jim Oliver), Nutrien (Eugene Longest),  
 and various seed suppliers

**Previous Crop:** Alfalfa / Orchardgrass hay  
**Soil Type:** 11B Kempsville / Emporia Complex 0 - 2 % slopes  
**Tillage:** No till  
**Planting Date:** April 16, 2019  
**Planting Equipment:** White 6180 planter, 12 row  
**Seeding Rate:** 29,500 Seed / Acre  
**Row Spacing:** 30"  
**Fertilizer:** **Preplant:** 170-52-100  
**Crop Protection:** **Burndown:** Roundup 32oz, Acuron 5.5pt; Atrazine 1pt;  
 Princep 1qt; Tombstone 2oz; LI700 1qt/100gal  
**Post Emergence:** Roundup PM 32oz; Trivapro 13.7oz + 1 gallon  
 Maximun Npact @ tassel  
**Harvest Date:** August 30, 2019  
**Harvest Equipment:** New Holland CR9040 combine w/ 6 row New Holland header

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Channel 208-23 (CHECK)		18.0	182.3
Progeny PGExp1815vt2ODG	115	19.7	190.9
Dynagro DG58VC65RIB	118	20.3	175.1
Syngenta NK Seeds NK1573-3330	115	18.8	174.5
Pioneer P1870AM	118	20.8	168.2
Dekalb DKC70-27RIB	120	21.0	182.3
Local LC1488 VT2P	114	18.8	197.1
Croplan 5678VT2	116	20.5	201.8
Hubner H4846C2P	118	20.2	202.55
Channel 217-76	117	19.7	204.3
Channel 208-23 (CHECK)		19.1	186.8

## Virginia Ag Expo Full Maturity Corn Hybrid Comparison

**Discussion:** Although all varieties yielded very well, it was noticed that 10 of the top yielding 11 varieties were located in the middle of the plot. Two feasible explanations may explain: 1) the middle of the plot contained mid-season varieties, which the season favored, and, 2) this area was also composed of a lower lying area that the outer thirds did not, theoretically allowing these hybrids to receive more groundwater during the drier than normal July. This is also supported by the middle two checks being higher in yield than the outer two.

## Prince George County Full Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Calvin Clements  
**Extension:** Scott Reiter, VCE Prince George

**Previous Crop:** Soybeans  
**Soil Type:** Catpoint fine sand  
**Tillage:** Strip-till subsoil under row  
**Planting Date:** April 23, 2019  
**Planting Equipment:** John Deere MaxEmerge XP  
**Seeding Rate:** 25,000 Seed /Acre  
**Row Spacing:** 30”  
**Fertilizer:**                   **Preplant:** 68 N- 36 P<sub>2</sub>O<sub>5</sub> – 114 K<sub>2</sub>O – 17 S  
**Planting:** 25 N- 25 P<sub>2</sub>O<sub>5</sub> – 0 K<sub>2</sub>O – 3 S – 1 Zn – 0.5 B  
**Sidedress:** 80 N – 0 – 0 – 10 S

**Crop Protection:**           **Burndown:** Glyphos 1.2 qt/A  
**Planting:** Solace 1.6 pt/A + Trizmet 2 qt/A

**Harvest Date:** September 7, 2019  
**Harvest Equipment:** John Deere S660 + 693 Header + Weigh wagon

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Check (Dyna Gro D57RR51)	117	18.0	160.2
Local LC1488 VT2P	114	17.1	166.6
Hubner H4846RC2P	118	17.8	184.7
Progeny 1815VT2PDG	115	18.3	187.6
Syngenta NK Seed NK1573-3330	115	17.7	147.9
Dyna Gro DG58VC65RIB	118	17.9	181.6
Pioneer 1870 AM	118	18.4	176.4
Dekalb DKC67-44	117	17.6	208.7
Dekalb DKC70-27RIB	120	19.3	178.7
Dekalb DKC68-69	118	18.9	188.0
Dekalb DKC63-57	113	17.0	185.9
Check (Dyna Gro D57RR51)	117	17.1	171.6

### Discussion:

This plot exceeded expectations on a sandy soil with hot and dry conditions in late June. Test weights were really good ranging from 56.8 – 60.3 pounds per bushel. Most varieties were 58-59 pounds per bushel. No problems with stalk strength or disease was observed with any hybrid while scouting during the season or at harvest.

## Appomattox County Full Maturity Corn Hybrid Comparison

**Cooperators:**                    **Producer:** Ben Cole  
     **Extension:** Bruce Jones, VCE Appomattox

**Previous Crop:** Soybeans  
**Soil Type:** Mattaponi-Cecil  
**Tillage:** No-till  
**Planting Date:** May 19, 2019  
**Planting Equipment:** John Deere 7200  
**Seeding Rate:** 30,000 Seeds / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                    **Preplant:** Variable rate P & K.  
     **Planting:** 30 units N + Zinc  
     **Sidedress:** 120 units N

**Crop Protection:**            **Planting:** Paraquat, Atrazine, Balance flex  
     **Post Emergence:** Roundup, Atrazine, Armezon Pro

**Harvest Date:** September 29, 2019  
**Harvest Equipment:** Gleaner R52

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Hubner Seed H4846RC2P	118	15.2	155.2
Pioneer P1870AM	118	16.4	144.6
Dekalb DKC70-27RIB	120	17.1	152.8
Dyna Gro DG58VC65RIB	118	16.2	164.5
Progeny Ag Products 1815VT2PDG	115	15.7	154.8
Local Seed Company LC1488 VT2P	114	14.3	152.6
Syngenta NK Seeds NK1573-3330	115	15.6	141.1
Dekalb DK 63-57	113	13.6	159.0
Augusta A1059-3110GT	109	14.2	136.7
Augusta 4565-3220GT	115	17.0	146.0
Dekalb DK 68-69	118	18.6	158.7

## Virginia State University Full Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** Ruddy Grammar & Mack West, VSU-Randolph Farm  
**Extension:** Glenn F. Chappell, II, Virginia State University

**Previous Crop:** Full Season Soybeans  
**Soil Type:** Tetotum  
**Planting Date:** April 24, 2019  
**Seeding Rate:** 24,625 Seed / Acre  
**Fertilizer:**                   **Preplant:** Broadcast: 32-0-0 Liquid w/ Burndown, April 17, 2019  
    **Planting:** Broadcast: 30-60-90 Granular, April 22, 2019  
    **Sidedress:** 130-0-0 UAN June 3, 2019

**Crop Protection:**           **Burndown:** 1 qt. Graxomone SL April 17, 2019  
    **Planting:** 2 qt. Bicept II Mag. + 1 qt. Princep 4L April 25, 2019

**Harvest Date:** September 26, 2019  
**Harvest Equipment:** John Deere 9560 STS

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)	% of Check
Dekalb DKC6357	113	13	136.7284	98.99016
Dekalb DKC67-44	117	13.7	153.5892	131.6217
Dekalb DKC67-44RIB	117	13.7	143.9179	-----
Hubner Seed H4846RC2P	118	13	134.8713	93.40171
Pioneer P1870AM	118	14	110.6037	76.5958
Dekalb DKC70-27RIB	120	13.5	124.864	86.47147
Dyna Gro DG58VC65RIB	118	13.7	135.1677	93.60701
Progeny Ag Products 1815VT2PDG	115	13.2	143.8253	99.60263
Local Seed Company LC1488 VT2P	114	13.4	116.6899	80.81068
Syngenta NK Seeds NK1573-3330	115	12.8	113.3103	78.47023
Dekalb DKC68-69	118	13.6	142.7015	98.82433
Dekalb DKC67-44RIB	117	13.4	144.8803	-----

**Discussion:** No irrigation was applied. The plot received 7.05” of rainfall from planting until July 7<sup>th</sup> with 52% of this rainfall occurring in the first ten days of June. After July 7<sup>th</sup>, only traces of rain were received. Based on information from extension, (<https://articles.extension.org/pages/14080/corn-water-requirements>) a high-yielding corn crop requires about 22” of water, with a range of 20 to 25”. About 15-16” of water is enough to produce a low yield, but that depends on when during the season the water is available or unavailable. The “% of Check” is calculated by dividing an individual hybrid's yield by the average of the two closest check hybrids and multiplying by 100.

## Dinwiddie County Full Maturity Corn Hybrid Comparison

**Cooperators:**                    **Producer:** Double B Farms  
**Extension:** Mike Parrish, VCE Dinwiddie

**Previous Crop:** Double Crop Soybeans  
**Soil Type:** Mattaponi Sandy Loam  
**Tillage:** Continuous No Till  
**Planting Date:** May 2, 2019  
**Planting Equipment:** Case IH MX305 tractor w/ Case IH 1250 16row 30in planter  
**Seeding Rate:** 28,000 Seeds / Acre  
**Row Spacing:** 4 x 30" rows  
**Fertilizer:**                    **Preplant:** 500lbs 5-10-30 broadcast 3-4-19  
**Planting:** Starter 2x2 15 gals/ac 19-19-0 qt boron/qt zinc  
**Crop Protection:**            **Burndown:** 1qt Roundup, 1qt 2-4D, 1qt Atrazine, 1.5pt Dual, 1qt to the hundred 80-20  
**Post Emergence:** 5-28-19 3pts Halex GT, 1pt Atrazine, NO surfactant 5-30-19 OT Nitrogen 50gal 24-0-0-3  
**Harvest Date:** September 24, 2019  
**Harvest Equipment:** Case IH 2588, 8 row Case IH 3408 header

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
H4846RC2P	118	15.9	163.4
P1870AM	118	16	136.4
DKC 70-27 RIB	120	16.5	145.2
DG58VC65RIB	118	15.5	136.1
Pro1815VT2PDG	115	16	168.0
LC1488 VT2P	114	14.5	164.0
NK1573-3330	115	14.8	151.2
A 4565-3220GT	115	15.1	162.8
DKC 68-69	118	17	194.0
DKC 67-44	117	16.8	196.2
DKC 63-57	113	16.7	181.9
H4890RC2P	117	16.1	180.2
H4744	113	15.7	153.0
LC1577	115	15.2	192.6
Check - DKC 64-25		15.8	198.5

**Discussion:** Planting was slightly delayed due to wet weather and endured an abundance of rain until early July when the plot experienced a window of dry weather and extremely high temperatures.

## Lunenburg / Mecklenburg County Full Season Maturity Corn Hybrid Comparison

**Cooperators:**                    **Producer:** Danny and David Moore  
**Extension:** Lindy Fimon and Taylor Clarke

**Previous Crop:** Flue-cured Tobacco  
**Tillage:** No-till  
**Planting Date:** April 25, 2019  
**Planting Equipment:** JD 1790 6 row vacuum planter  
**Seeding Rate:** 28,000 Seed / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                    **Preplant:**                    25-40-100  
    **Planting:**                    60-0-0  
    **Sidedress:**                85-0-0

**Crop Protection:**            **Burndown:**                Gramoxone, 2-4D, Bicep Magnum  
    **Post Emergence:** Roundup, Atrazine (1pt)

**Harvest Date:**                October 2, 2019  
**Harvest Equipment:**        Gleaner R52 6 row head

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
Dekalb DKC62-08RIB	112	13.5	60.2
Hubner Seed H4846RC2P	118	14.2	96.9
PioneerP1870AM	118	13.6	124.5
Dekalb DKC70-27RIB	120	13.2	122.9
Dyna Gro DG58VC65RIB	118	12.9	128.9
Progeny Ag Products 1815VT2PDG	115	12.8	138.4
Local Seed Company LC1488 VT2P	114	12.8	138.4
Syngenta NK Seed NK1573-3330	115	13.1	128.8
Dekalb DKC62-08RIB	112	12.7	111.3
Dekalb DKC62-08RIB	112	12.7	73.1
Dekalb DKC68-69	118	13.3	111.9
Dekalb DKC67-44	117	12.7	117.1
Dekalb DKC63-57	113	12.9	117.8
Dekalb DKC62-08RIB	112	12.5	94.0

**Discussion:** The epitome of a high stress environment in a very stressful season. Low organic matter, high tillage sandy loam soil, historically rotated every other year to flue-cured tobacco. Small ears were filled to the tip with small kernels. Plots 9-13 in separate field.



## Southampton County Full Maturity Corn Hybrid Comparison

**Cooperators:**                   **Producer:** D&J Farms, Dennis & Denton Spruill  
    **Extension:** Joshua Holland, VCE Southampton

**Previous Crop:** Peanuts  
**Soil Type:** Slagle, Fine Sandy Loam  
**Tillage:** Strip-Till  
**Planting Date:** April 18, 2019  
**Planting Equipment:** KMC 8-Row Strip-Till Rig, John Deere 7300 MaxEmerge Planter  
**Seeding Rate:** 28,000 Seed / Acre  
**Row Spacing:** 36"

**Fertilizer:**                   **Preplant:**                   2.25 tons Poultry Litter  
    **Planting:**                   17-17-0 2x2 band @ 12 gal./acre  
    **Sidedress:**               30-0-0 @ 120 units/acre

**Crop Protection:**       **Burndown:**               32 oz. Roundup, 1 qt. 2,4-D, 2 oz. Valor  
    **Post Emergence:**       3.6 qt. Halex GT, 2 qt. Atrazine

**Harvest Date:** September 9, 2019  
**Harvest Equipment:** John Deere 9760 Grain Combine

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
CHECK		14.2	195.8
Hubner H4846 RC2P	118	14.2	191.5
Pioneer P1870AM	118	15.1	176.4
Dekalb DKC70-27RIB	120	14.6	185.7
DynaGro DG58VC65RIB	118	13.8	183.6
Progeny 1815 VT2P	115	13.9	188.7
Local Seed LC1488 VT2P	114	14.6	157.8
Syngenta NK1573-3330	115	14.3	138.5
Dekalb DKC67-44RIB	117	14.1	193.2
Dekalb DKC68-69RIB	118	14.1	188.9
CHECK		14.1	195.3

**Discussion:** Conditions in the field were favorable from planting through the end of May for a high yield environment. An extremely wet June, coupled with a dry July and August did not help yields across all varieties. Overall, yields were good considering the weather challenges that were faced. Fertility and weed control were timed nicely to provide all hybrids with the necessary inputs needed to achieve high yields.

## Culpeper County Full Season Corn Hybrid Comparison

**Cooperators:**                    **Producer:** The Glebe Farm, Steve and Ross Swan  
**Extension:** Carl Stafford  
**Industry:** John Vandecrommert, Hubner

**Previous Crop:** Soybeans (50 bu)  
**Soil Type:** Rapidan-Penn (48C)  
**Tillage:** No-Till  
**Planting Date:** April 22, 2019  
**Planting Equipment:** Kinze 6 row  
**Seeding Rate:** 32,000 Seed / Acre  
**Row Spacing:** 30”  
**Fertilizer:**                    **Preplant:** P&K variable rate  
    **Planting:** N (50 lbs)  
    **Sidedress:** N (60 lbs)

**Crop Protection:**            **Burndown:** Attrazine, Glyphosate  
    **Post Emergence:** Glyphosate

**Harvest Date:** September 25, 2019  
**Harvest Equipment:** CIH Axle Flow Model 7230

Hybrid	Maturity (Days)	% Moisture	Yield (bu./A @15.5%)
(Check) Hubner H6663RCSS	113	12.8	117.8
Progeny Ag Products 1815VT2PDG	115	13.1	116.8
Dekalb DKC70-27RIB	120	13.5	123.6
Local Seed Company LC1488VT2P	114	12.6	125.8
Syngenta NK Seeds NK1573-3330	115	12.5	100.7
(Check) Hubner H6663RCSS	113	13.0	122.5
Hubner Seed H4846RC2P	118	13.1	131.2
Pioneer P1870AM	118	13.5	108.1
Dyna Gro DG58VC65RIB	118	13.2	110.2
(Check) Hubner H6663RCSS	113	13.0	104.0

## 2019 Virginia Ag Expo Corn Hybrid Comparison Plot

Photo by Mike Broaddus



## Westmoreland Corn Following Legume Cover Crop Plot

**Cooperators:** **Producer:** Keith Balderson  
**Extension:** Stephanie Romelczyk, VCE-Westmoreland and Robbie Longest, VCE-Essex County  
**Other:** Danny Withers, Three Rivers SWCD  
**Soil Type:** Kempsville loam & Suffolk sandy loam  
**Hybrid:** Dekalb 62-53  
**Plot Width:** 12 feet  
**Tillage:** No-Till  
**Previous Crop:** Soybeans  
**Planting Date:** Oct. 19, 2018 for cover crop; corn planted April 18, 2019  
**Fertilizer:** 60-80-60-10(S) lb/ac broadcast with herbicides  
 Sidedress: 80 lb/ac N and 10 lb/ac S  
**Crop Protection:** Burndown: Gramoxone  
 Pre-emergence: Accuron, Simazine, Atrazine,  
**Harvest Date:** September 11, 2019  
**Harvest Equipment:** John Deere 7720

Treatment	Rep.	% Moisture	Population Stand (Plants/A)	Yield (bu./ac. @15.5%)
Hairy Vetch	1	15.4	25,000	174.2
Austrian Winter Pea	1	15.8	24,500	190.9
Crimson Clover	1	16.1	24,000	161.4
Fallow (Check)	1	15.6	24,000	170.5
Fallow (Check)	2	16.0	25,000	167.1
Austrian Winter Pea	2	16.1	25,000	186.1
Hairy Vetch	2	16.0	25,500	203.3
Crimson Clover	2	16.4	25,000	205.3
Fallow (Check)	3	16.3	25,000	204.7
Hairy Vetch	3	16.3	24,500	206.0
Austrian Winter Pea	3	16.4	25,000	199.1
Crimson Clover	3	16.7	24,500	185.3
<b>Average Fallow (Check)</b>		<b>16.0</b>	<b>24,667</b>	<b>180.78</b>
<b>Average Hairy Vetch</b>		<b>15.9</b>	<b>25,000</b>	<b>194.49</b>
<b>Average Austrian Winter Pea</b>		<b>16.1</b>	<b>24,833</b>	<b>192.03</b>
<b>Average Crimson Clover</b>		<b>16.4</b>	<b>24,500</b>	<b>183.95</b>



## Westmoreland Corn Following Legume Cover Crop Plot

### Discussion:

The purpose of this plot was to compare the performance of corn following Austrian winter pea, crimson clover, and hairy vetch cover crops to corn following fallow ground. The previous crop was full-season soybeans that averaged about 60 bushels per acre. Cover crops were planted on October 19<sup>th</sup> and terminated on April 15<sup>th</sup>. Corn was planted on April 18<sup>th</sup>. All plots received 60 pounds of nitrogen per acre pre-plant in a broadcast application and 80 pounds of nitrogen per acre in a sidedress application. Growing conditions were good for most of the season, but the plot received no rainfall from June 19<sup>th</sup> to July 7<sup>th</sup>. In addition, the daily high temperature during that time period was over 90 degrees F on nine days. Bio-mass and plant available nitrogen (PAN) estimates were not taken from the legume cover crops. Due to late planting and relatively early termination of the cover crops, both were estimated to be relatively low. Bio-mass was probably a ton or less per acre and PAN estimates were estimated to be about 30 pounds per acre. Corn yields following the cover crops were higher than corn yield following fallow ground with yields following hairy vetch and Austrian winter pea over 10 bushels per acre higher. Nitrogen use efficiency (NUE) was excellent in all treatments. Growers should experiment with cover crops to help them determine how they can fit into their cropping systems in an effort to increase yields and profitability as well as improve soil health.



**Figure 1: Harvest of corn following legume cover crop plot treatments of hairy vetch, Austrian winter pea, crimson clover, and a fallow check on September 11, 2019.**

## Essex Corn Following Legume Cover Crop Plot

<b>Cooperators:</b>	<b>Producer:</b> Montague Farms <b>Extension:</b> Robbie Longest, VCE-Essex County <b>Other:</b> Danny Withers, Three Rivers SWCD; Keith Balderson, NRCS
<b>Soil Type:</b>	Slagle fine sandy loam, Emporia sandy loam, Atlee loam
<b>Hybrid:</b>	Pioneer 1847 AML
<b>Plot Width:</b>	30 feet wide
<b>Tillage:</b>	No-Till
<b>Previous Crop:</b>	Full-Season Soybeans
<b>Planting Date:</b>	Oct. 8, 2018 for cover crop; corn planted April 25, 2019
<b>Fertilizer:</b>	30 lb/ac N in starter, 50 lb/ac N broadcast w/ herbicides K (250 lb/ac of 150 lb of plant food) P (11-37-0 at 20 gal/ac) <b>Sidedress:</b> 75 lb/ac N as 24-0-0-3 on cover crop plots 150 lb/ac N as 24-0-0-3 on fallow plots <b>In-Season:</b> MaxxGro Corn (1 qt/ac), Quantum (1 gal/ac) (Flown On w/ Airplane at fungicide application)
<b>Crop Protection:</b>	<b>Burndown:</b> Gramoxone (1.5 qt/ac), Balance Flex (5 oz/ac) in 24-0-0-3 carrier (20 gal/ac) <b>Post-emergence:</b> Roundup (44 oz/ac), Realm Q (4 oz/ac) <b>Fungicide:</b> Approach Prima (6.8 oz/ac) (Flown on w/ Airplane)
<b>Harvest Date:</b>	September 27, 2019
<b>Harvest Equipment:</b>	John Deere 9870 STS



**Figure 1: Cover crop treatment strips during biomass sampling.**  
(Aerial Photography Courtesy of Trent Jones, VCE Northumberland/Lancaster)

## 2019 Essex Corn Following Legume Cover Crop Plot

Treatment	Rep.	Population Stand* (Plants/Acre)	% Moisture	Yield (bu./ac.@15.5%)
Austrian Winter Pea	1	30,000	12.8	229.4
Fallow (Check)	1	29,100	13.2	228.7
Hairy Vetch	1	30,000	13.0	236.9
Crimson Clover	1	29,400	12.8	216.3
Austrian Winter Pea	2	30,000	12.7	236.5
Crimson Clover	2	31,200	12.8	218.5
Hairy Vetch	2	31,500	12.4	229.9
Fallow (Check)	2	31,800	12.8	218.7
Crimson Clover	3	-	12.4	196.3
Fallow (Check)	3	-	12.7	219.5
Austrian Winter Pea	3	-	13.0	221.5
Hairy Vetch	3	-	12.8	226.8
Treatment	Rep.	Population Stand* (Plants/Acre)	% Moisture	Yield (bu./ac.@15.5%)
<b>Average Fallow (Check)</b>		<b>30,450</b>	<b>12.9</b>	<b>222.3</b>
<b>Average Hairy Vetch</b>		<b>30,750</b>	<b>12.7</b>	<b>231.2</b>
<b>Average Austrian Winter Pea</b>		<b>30,000</b>	<b>12.8</b>	<b>229.1</b>
<b>Average Crimson Clover</b>		<b>30,300</b>	<b>12.7</b>	<b>210.4</b>

\*Population stand counts are the average of four counts per treatment plot in Reps. 1 & 2.



**Figure 2: Planting corn into legume cover crops on April 25, 2019 in Essex County Virginia.**

(Photo Courtesy of Danny Withers, Three Rivers SWCD)

## 2019 Essex Corn Following Legume Cover Crop Plot

**Discussion:** The purpose of this plot was to compare the performance of corn following Austrian winter pea, crimson clover, and hairy vetch cover crops to corn following fallow ground. Corn was planted on April 25<sup>th</sup> into green cover crops which had excellent growth and were terminated on April 26<sup>th</sup> (Figure 1). Bio-mass samples were taken (Figure 1) and nitrogen tissue sample results from a similar test conducted in 2016 were used to estimate plant available nitrogen (PAN). Soil Pre-Sidedress Nitrate Tests (PSNT) were also conducted to determine the presence of PAN resulting as a release from the cover crops. Complete results are listed below in Table 1. Fallow plots and legume plots received 150 lbs/ac N, and 75 lb/ac N respectively in a side-dress application. Our goal was to apply 100 and 50 lb/ac of side-dress nitrogen (N) to the fallow plots and legume plots respectively, but we couldn't get the rates that low with application equipment. Growing conditions were good for the most part throughout the season, but there were some dry spells and many days with temperatures over 90 degrees F.

Overall, yields were excellent in this dryland corn plot. Corn behind the hairy vetch and Austrian winter pea covers yielded more than corn following fallow ground (full-season soybeans.) Corn following the crimson clover cover crop resulted in the lowest yield of all treatments, with similar results being observed in past years. This may be partially explained due to the crimson clover's growth stage at termination (fully headed), which likely resulted in a higher C:N ratio and less plant available nitrogen than estimated. Also, it has been observed in the past that the crimson clover seems to dry soils out more than hairy vetch and Austrian winter peas. Growers should experiment with cover crops to help them determine how they can fit into their cropping systems in an effort to increase yields and profitability as well as improve soil health.

**Table 1: Biomass sample data (lb/ac) and %N estimates used to determine PAN (lb/ac) estimates. PSNT results are also included in ppm.**

Cover Crop Treatment	Bio-mass (lbs./acre)	% N @ Termination	PAN Est. (lbs./acre)*	PSNT** (ppm)
Austrian Winter Pea	5,666	2.95%	84	17.8
Crimson Clover	6,914	2.31%	80	14
Hairy Vetch	4,225	3.32%	70	23.4
Fallow	NA	NA	NA	13.2

\*Estimated by multiplying %N times bio-mass and assuming 50% of the N is Plant Available Nitrogen (PAN)

\*\* PSNT values are an average of four samples; one from each treatment replication.



