North East Texas IPM (Integrated Pest Management)

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TEXAS A&M AGRILIFE EXTENSION

Inside this issue:

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General Area Crop Progress

Conditions in the area are still wet with field spraying and some preliminary corn planting the major cropping activities. The wheat has greened up nicely following topdressing. Most fields are jointing. Some of the earlier maturing varieties are progressing pretty fast and the growth stage needs to be watched to protect the flag leaf from rust. Rust has not been spotted in this part of the state but it is progressing to the south of us and given our moisture is very likely. Bird cherry oat aphids can be found in most fields but are still at low levels. Beneficial insects are also found and parasitized aphids can also be found. See picture below of aphids on a leaf and larger dead parasitized dead aphid or "mummy". There are hardly any symptoms of barley yellow dwarf virus (BYDV) which is transmitted by the aphids, if they are infected. Low BYDV infection reduces concern with the aphids.

Due to these conditions aphid spraying is not warranted. Low non significant levels of winter grain mites have also been spotted. More on these insect pests can be found at:

https://agrilife.org/extensionento/files/2018/09/Wheat-Pest-Guide-ENTO-084_final.pdf

To aid in **Corn Planting** some trial information on seeding rate and fertilizing with an in furrow treatments are presented in this newsletter.

Trial and production information for most crops in Texas can at:

http://varietytesting.tamu.edu/

Industrial Hemp Applications go online on March 16th.

There is a TDA orientation video with application information at:

https://www.texasagriculture.gov or directly

https://www.youtube.com/watch?v=da4zFYrQiGg&t=124s

Corn Fertility Trials with products applied in-furrow at planting.

In-furrow and foliar fertility trials have been conducted at the Greenville farm since 2017. There are not many significant differences between products rates and application timings but there are significant differences between most fertilizer treatments and no treatment. Below is a table summarizing three treatments that were the same in all three years from 2017-2019.

Table 1. Average corn yields (bu/ac) for three in-furrow at planting fertilizer treatments compared to no in-furrow at planting treatment at Greenville, TX 2017-2019.

Year	Untreated	NACHURS imPulse (10-18-4) @ 5 gal/acre	NACHURS imPulse (10-18-4) @ 5 gal/ac + 1Qt CornGrow or CropMax	10-34-0 @ 10 gal/ac + 1Qt NACHURS CornGrow	Yield Increase between untreated and average of treated
2017	127.4	157.9	169.0	166.2	36.9
2018	107.8	113.8	122.5	117.5	10.2
2019	118.4	132.1	143.6	129.7	16.7
3 yr Ave.	117.9	134.6	145.0	137.8	21.2

Table 2. Dry matter mass of three growth stage V4-V5 corn seedlings from different in-furrow at planting fertilizer treatments Greenville, TX 2019 Seeded March 29, 2019 and harvested May 1, 2019.

In-furrow at Planting Treatment	Dry matter mass (grams)	Units of N/ac in treatment	Units of P_2O_5/ac in treatment	Units of K_2O/ac in treatment
10-34-0 @ 10.0 gal/A + CornGrow @ 1.0 qt/A	20.6 a	11.65	39.6	0
Impulse (10-18-4) @ 4.75 gal/A + CropMax @ 1 qt/A	20.0 ab	5.01	9.02	2.0
10-34-0 @ 5.0 gal/A + CornGrow @ 1.0 qt/A	20.0 ab	5.83	19.8	0
Impulse (10-18-4) @ 5.0 gal/A	19.5 ab	5.28	9.50	2.1
10-34-0 @ 5.0 gal/A + CornGrow @ 1 qt/A + K-fuse @ 2.0 gal/A	18.8 ab	5.83	19.8	2.6
Triple Option (4-13-17) @ 3.25 gal/A + CropMax @ 1 qt/A	17.5 ab	1.46	4.75	6.2
Triple Option (4-13-17) @ 2.75 gal/A + Rhyzo-Link (3-10-3) @ 2.0 gal/A + CropMax @ 1 qt/A	16.9 ab	1.87	6.12	5.89
Untreated Check	14.5 b	0	0	0

Table 2. Average Corn yields (bu/ac) and other agronomic measurements for in-furrow at planting fertilizer treatments and selected foliar and sidedress treatments at Greenville, TX 2019. Yields were measured by selecting 3 representative ears from each plot and also harvesting the two middle of 4 rows with a plot combine.

2019 Corn @ Greenville, TX
Northeast Texas Agricultural Research Farm

TREATMENT†	Stand (plants/row)	Ear Yield – 3 ears (bu/ac)	Thousand Kernel Weight (grams)	Test Weight (lb/bu)	Combine Yield (bu/ac)
Impulse @ 4.75 gal/A + CropMax @ 1 qt/A	**37.5**	**140.5 ab**	**328.7 ab**	**57.7**	**143.6 a**
Triple Option @ 2.75 gal/A + Rhyzo-Link 3-10-3 @ 2.0 gal/A + CropMax @ 1 qt/A	**38.8**	**136.9 ab**	**324.6 ab**	**58.0**	**134.2 ab**
Impulse @ 5.0 gal/A ***fb*** Finish Line @ 1 qt/A	**37.3**	**134.0 ab**	**328.2 ab**	**58.0**	**132.4 ab**
Impulse @ 5.0 gal/A	**38.8**	**146.5 a**	**338.6 ab**	**57.8**	**132.1 ab**
Triple Option @ 3.25 gal/A + CropMax @ 1 qt/A	**36.3**	**135.1 ab**	**315.3 b**	**58.1**	**131.5 ab**
Impulse @ 4.75 gal/A + CropMax @ 1 qt/A ***fb*** Rhyzo-Link 0-0-15 @ 1.0 gal/A w/ sidedress UAN	**40.3**	**131.4 ab**	**328.0 ab**	**57.8**	**131.3 ab**
Impulse @ 4.75 gal/A + CropMax @ 1 qt/A ***fb*** K-fuse @ 2.0 gal/A w/ sidedress UAN	**39.3**	**133.1 ab**	**328.3 ab**	**57.5**	**129.9 ab**
Impulse @ 5.0 gal/A + CropMax @ 1 qt/A ***fb*** K-fuse @ 2.0 gal/A w/ sidedress UAN	**38.0**	**142.7 a**	**347.1 a**	**57.9**	**129.5 ab**
10-34-0 @ 5.0 gal/A + CornGrow @ 1.0 qt/A	**38.3**	**125.9 ab**	**314.4 b**	**57.5**	**128.3 ab**
10-34-0 @ 10.0 gal/A + CornGrow @ 1.0 qt/A	**38.5**	**133.4 ab**	**320.7 ab**	**57.3**	**129.7 ab**
10-34-0 @ 5.0 gal/A + CornGrow @ 1 qt/A + K-fuse @ 2.0 gal/A	**38.0**	**137.0 ab**	**311.1 b**	**57.4**	**119.4 b**
Untreated Check	**37.4**	**111.9 b**	**312.1 b**	**57.0**	**118.4 b**
10-34-0 @ 5.0 gal/A + CornGrow @ 1 qt/A ***fb*** K-fuse @ 2.0 gal/A w/ sidedress UAN	**38.5**	**133.6 ab**	**329.9 ab**	**56.6**	**113.7 b**
LSD (P = .05)	***NS***	***17.16***	***17.26***	***NS***	***13.20***
CV (%)	***5.08***	***8.96***	***3.70***	***1.15***	***7.19***
GRAND MEAN	***38.2***	***133.5***	***325.1***	***57.6***	***128.0***

TREATMENT NOTE: All applications made in-furrow at planting, if there is a *fb* that means followed by at top dressing about V5 in April

CORN HYBRID: DKC 67-14, Date Planted: March 29, 2019, Date Harvested: August 20, 2019, Planting Rate: 28,000 seeds/acre, Row Width (in): 30, Plot Length (ft): 25.3, Number of rows planted: 4, Number of rows harvested: 2

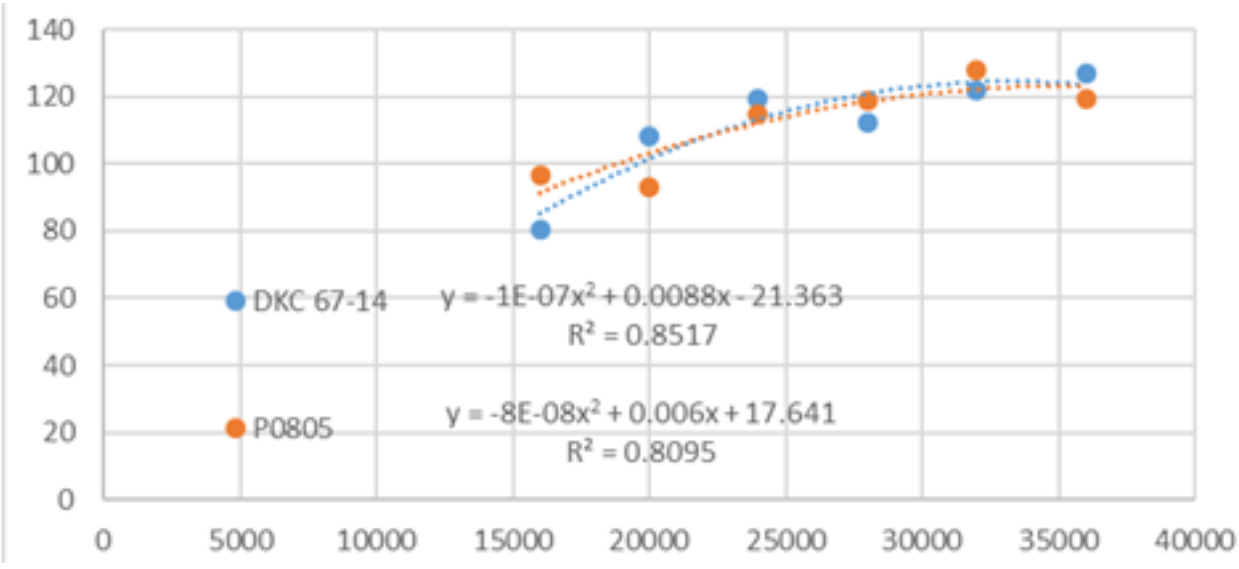
Yields Corrected to 15.5% Moisture

†Ranked according to Combine Yield

2018 Corn @ Greenville, TX (Northeast Texas Agricultural Research Farm)
Population Study

HYBRID/POPULATION	Yield (bu/ac)	Test Weight (lb/bu)
Dekalb 67-14 @ 16,000 seeds/Ac	**80.3 d**	**55.6**
Dekalb 67-14 @ 20,000 seeds/Ac	**108.4 ab**	**56.1**
Dekalb 67-14 @ 24,000 seeds/Ac	**119.3 a**	**56.3**
Dekalb 67-14 @ 28,000 seeds/Ac	**112.1 a**	**56.3**
Dekalb 67-14 @ 32,000 seeds/Ac	**121.9 a**	**55.9**
Dekalb 67-14 @ 36,000 seeds/Ac	**127.2 a**	**56.2**
Pioneer 0805 AM @ 16,000 seeds/Ac	**96.7 bc**	**56.6**
Pioneer 0805 AM @ 20,000 seeds/Ac	**93.2 c**	**56.1**
Pioneer 0805 AM @ 24,000 seeds/Ac	**115.0 a**	**56.5**
Pioneer 0805 AM @ 28,000 seeds/Ac	**118.8 a**	**56.2**
Pioneer 0805 AM @ 32,000 seeds/Ac	**127.0 a**	**56.4**
Pioneer 0805 AM @ 36,000 seeds/Ac	**119.5 a**	**56.1**
LSD (P = .05)	***12.36***	***NS***
CV (%)	***7.7***	***0.7***
GRAND MEAN	***111.61***	***56.19***

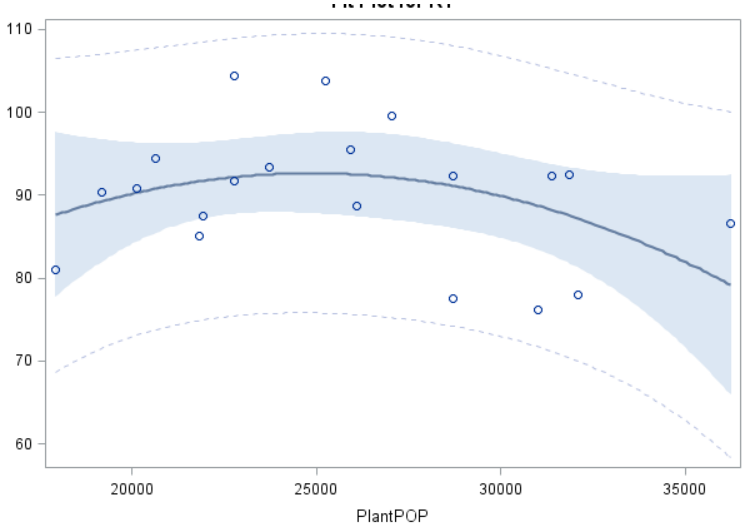
2018 Corn Population Study with yield curves of Hybrids DKC67-14 and Pioneer 0805. In this year the yield optimum would be estimated at 33,500 plants per acre. The return based on seed cost would be lower, where the slope of the line is steeper, 24-30K.



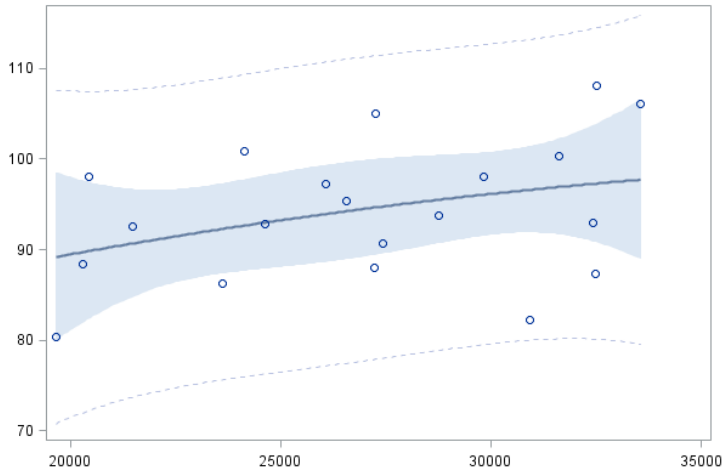
Corn Population Trials at Greenville 2019

There were 4 hybrids in this trial and two of them continue to increase in yield with higher populations D58SS65 and DKC 67-99 the other two hybrids show a drop off at higher populations and will have a lower optimum planting rate for yield. Looking over all the Extension population trials from Port Lavaca, Wharton, Thrall, Bardwell, and Greenville the optimum relative yield population was 29,459 for D54VC14 and 33,064 for D58SS65. We acknowledge Dr. Ronnie Schnell and the Crop Testing group conducting these trials.

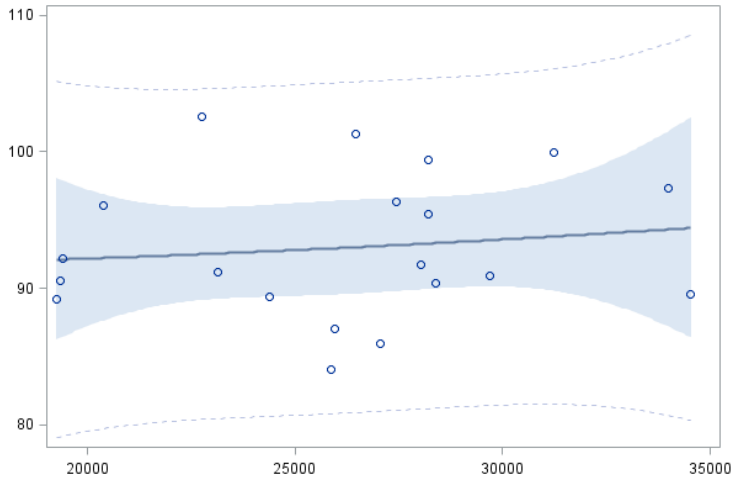
Greenville 2019 Corn Population Yield curve for D54VC14



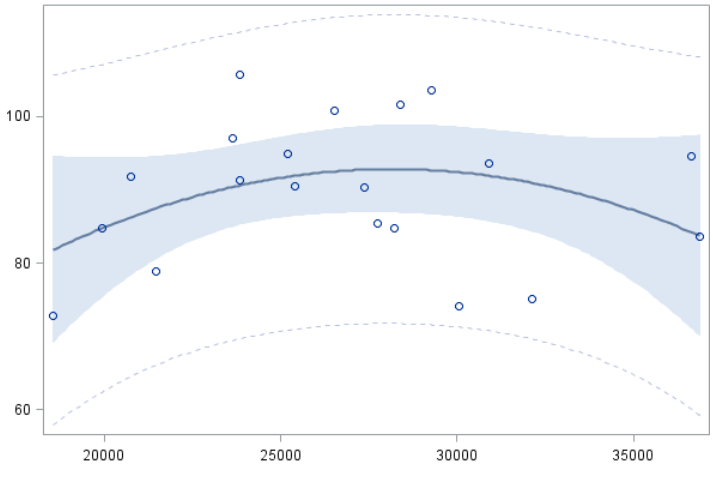
Greenville 2019 Corn Population Yield Curve D58SS65

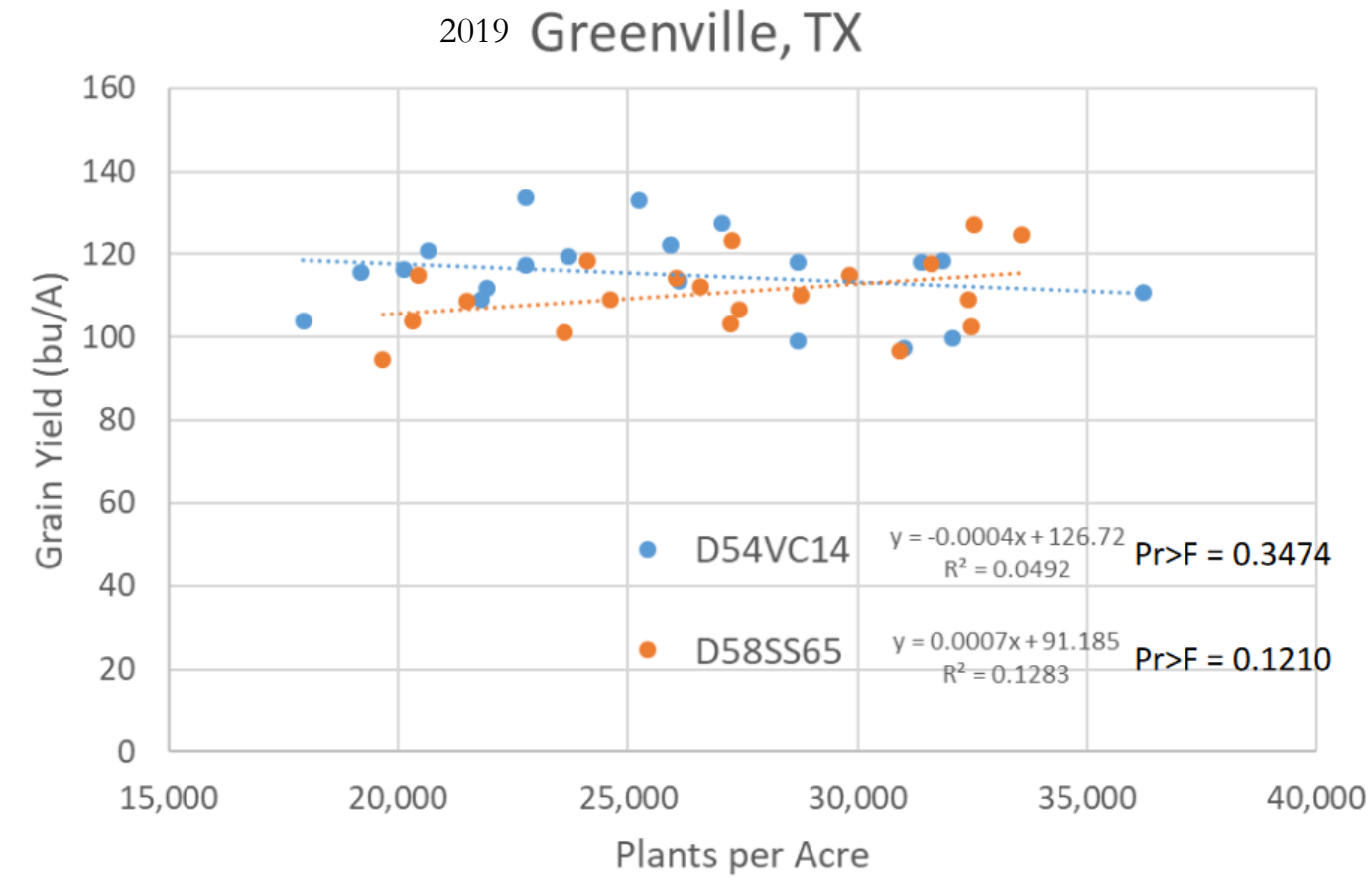


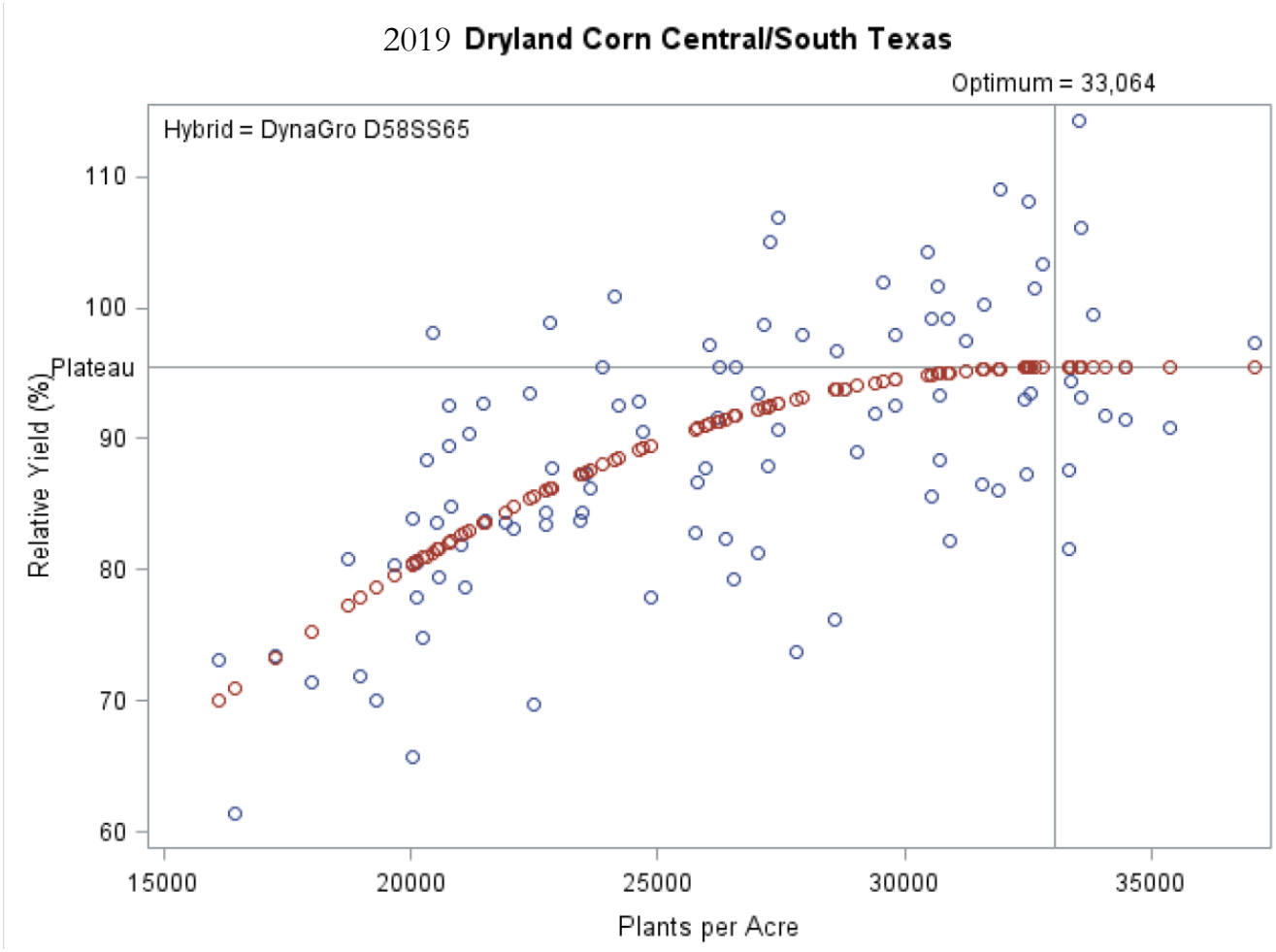
Greenville 2019 Corn Population Yield Curve DKC 67-99

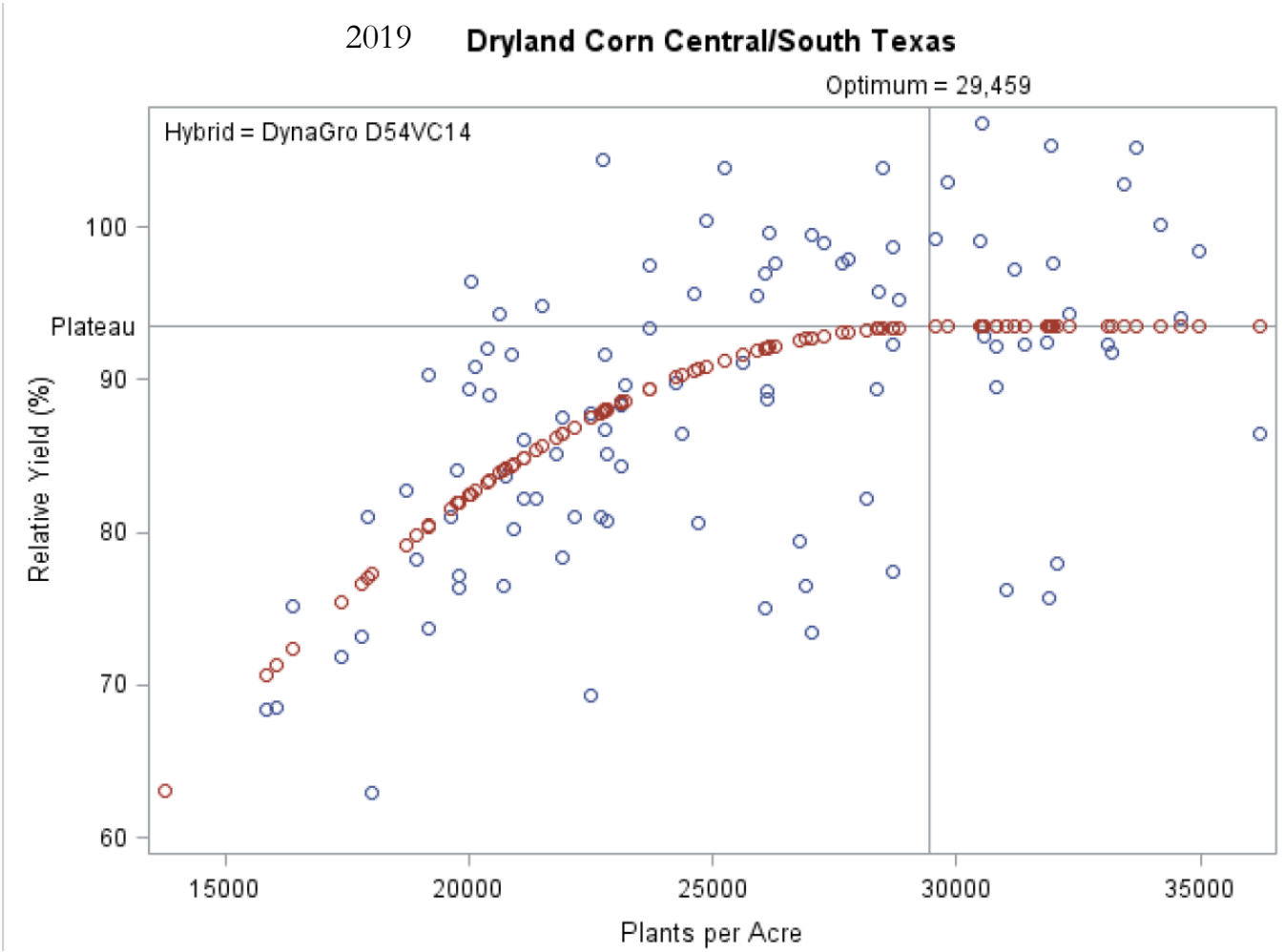


Greenville 2019 Corn Population Yield Curve Pioneer 0805




2019 Greenville, TX
Grain Yield (bu/A)
160
140
120
100
80
60
40
20
0
15,000
20,000
25,000
30,000
35,000
40,000
Plants per Acre
D54VC14
y = -0.0004x + 126.72
R² = 0.0492
Pr>F = 0.3474
D58SS65
y = 0.0007x + 91.185
R² = 0.1283
Pr>F = 0.1210


2019 Dryland Corn Central/South Texas
Optimum = 33,064
Hybrid = DynaGro D58SS65
Relative Yield (%)
110
100
90
80
70
60
Plateau
15000
20000
25000
30000
35000
Plants per Acre



Looking back to 1987-89 trials in Royce City the populations have not increase much but thankfully the average yields have.

EARLY - MED EARLY HYBRIDS

PLANT POPULATION	YIELD (BU/A) 1987	1988	1989 DK572	AVG
12,000	67	32	56	52
16,000	87	36	64	62
20,000	93	38*	70	67
24,000	105*	34	87*	75*
28,000	105	36	83	75
32,000	116	32	81	76

MEDIUM LATE HYBRID (FUNKS 4673A)

PLANT POPULATION	YIELD (BU/A) 1987	1988	1989	AVG
12,000	103	44	67	71
16,000	133	48*	83	88
20,000	146	47	85	93
24,000	154*	46	89*	96*
28,000	157	41	86	95
32,000	156	38	94	96

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Calendar

March 23 Hemp Seminar - Waxahachie 8:30 am RSVP wmarnold@ag.tamu.edu—Cancelled

March 23 Hemp Seminar - Overton 2 pm RSVP jamie.sugg@ag.tamu.edu –Cancelled

Note to prevent the spread of Covid-19 most Extension programs have been cancelled or rescheduled.

For more information on COVID-19 and the changing situation see

Texas A&M AgriLife Extension

Extension Disaster Education Network (EDEN)

EDEN information on the Coronavirus can be found at:

https://texashelp.tamu.edu/coronavirus-information-resources/

May 4-8th Wheat Field Days