2025 Delaware Soybean Variety Trials

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Variety Testing
Program

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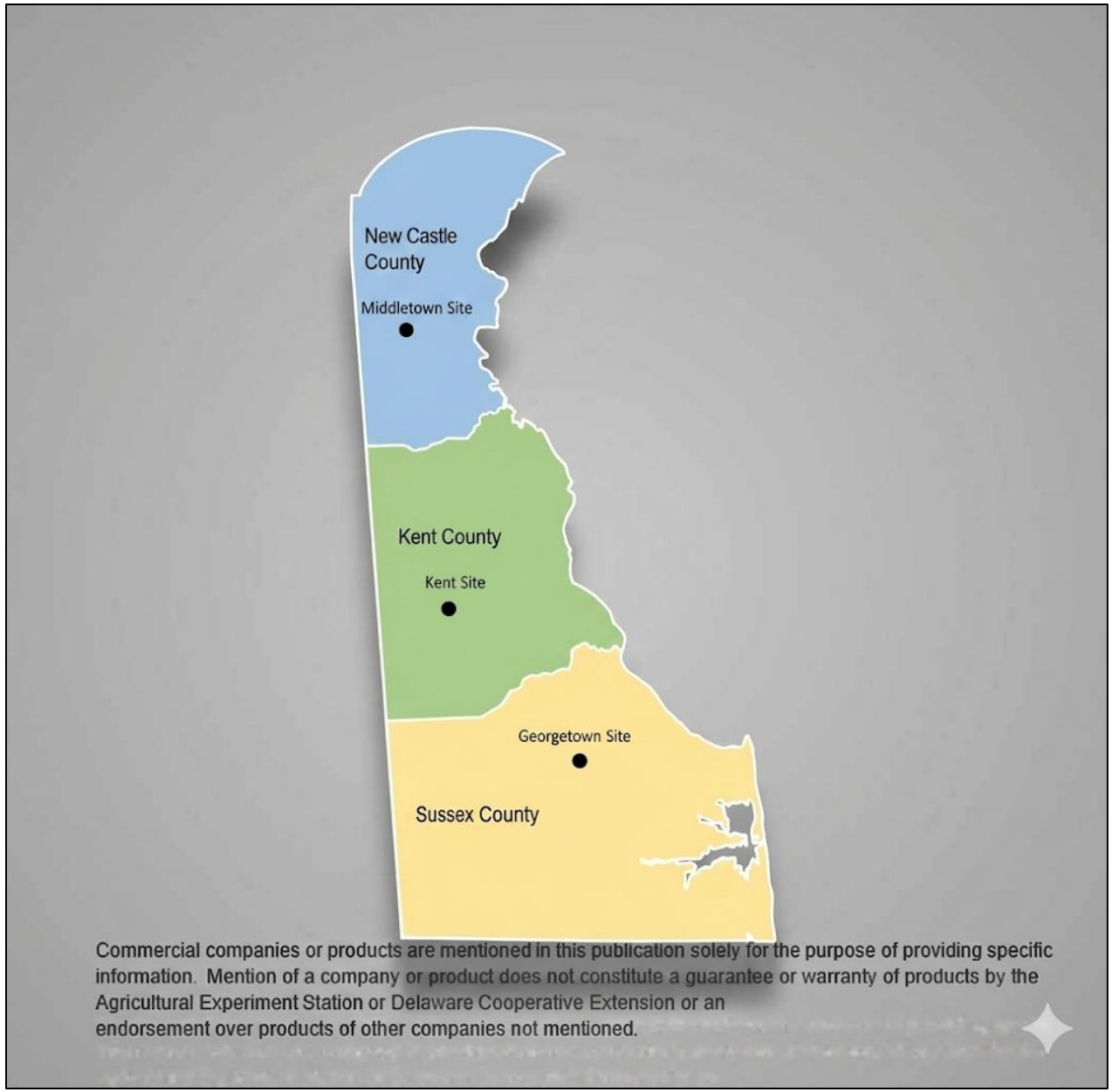

Acknowledgments

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Methodology

All trials were conducted in a randomized, complete block design with four total replications. The final plot length of all trials was 17 ft. More experimental details such as population, plot width, planting/harvest dates, and tillage or cultural practices can be found in the following table. Temperature and rainfall information for the growing season can be accessed at the nearest test locations from DEOS http://www.deos.udel.edu/

C.V. and L.S.D.

The coefficient of variation (C.V.) is a measurement of the amount of uncontrollable variability due to differences in the soil, weather, fertility, etc. The acceptable CV level is dependent on the field of the research. Medicine and pharmaceutical research have stricter CV ranges than research in agricultural sciences due to more control over outside variables. The American Association for Clinical Chemistry in ***Clinical Chemistry, Volume 35, Issue 4*** defines for agricultural studies that CV<10 is very good, 10-20 is good, 20-30 is acceptable. Please note that the C.V. is expected to be higher at dryland locations.

The least significant difference (L.S.D.; computed at a 5% level of probability) is a tool to determine if two average values are significantly different. The difference between two varieties must exceed the L.S.D. value to be considered significantly different from one another.

HOW TO BEST USE SOYBEAN VARIETY TRIAL INFORMATION

Information presented in this summary may be useful in selecting soybean varieties for production in Delaware. To maximize the usefulness of this information, follow these suggestions:

1. Select the test location that best represents your production location. Generally, varieties are adaptable across Delaware but certain soil or climatic conditions, cultural practices, or insect/disease problems may limit the choice.

2. Multiple-year average (means) across the greatest number of years are the best predictors of performance. Refer to previous test reports for information to evaluate soybean varieties which are of interest to you. Comparison between your selected variety and the grand mean for your closest test location will be helpful in identifying superior varieties for your area.

3. Check the grand mean for the long-term averages and compare with your own production experience. If your yields have been consistently below these grand mean levels, you should evaluate each part of your management system for potential areas of improvement.

2025 Delaware Soybean Variety Trial Entries

Brand	Variety	Traits	Maturity
Dynagro	S38EN75	3.8	Enlist
Dynagro	S40EN54	4	Enlist
Dynagro	S47ES36	4.7	Enlist
Growmar FS	HS41E20	4.1	Enlist
Growmar FS	HS43E30	4.3	Enlist/STS
Growmar FS	HS45E50	4.5	Enlist
Growmar FS	HS47E32	4.7	Enlist/STS
Growmar FS	HS 48E40	4.8	Enlist/STS
Innvict	B3805E	3.8	Enlist
Innvict	B3934E	3.9	Enlist
Innvict	B4075E	4	Enlist
Innvict	B4225E	4.2	Enlist
Innvict	B4553E	4.5	Enlist
Innvict	B4744E	4.7	Enlist
NK	NK43-K2E3S	4.3	Enlist
NK	NK47-U1XFS	4.7	XtendFlex
NK	NK47-G5E3S	4.7	Enlist
NK	NK44-Q5E3S	4.4	Enlist
Seed Consutants	SC7485E	4.8	Enlist
Seed Consutants	SC7465E	4.6	Enlist
Seed Consutants	SC7446E	4.4	Enlist
USG	7485 ETS	4.8	Enlist/STS
USG	7486 ETS	4.8	Enlist/STS
USG	7494 ETS	4.9	Enlist/STS
USG	7434 XF	4.3	XtendFlex
USG	7415 ET	4.1	Enlist
USG	7456 ET	4.5	Enlist
USG	7435 ET	4.3	Enlist
USG	7496 XFS	4.9	XtendFlex/STS
Xitavo	XO 4566E	4.5	Enlist
Xitavo	XO 4056E	4	Enlist
Xitavo	XO 4364E	4.3	Enlist

Xitavo	XO 4255E	4.2	Enlist
Xitavo	XO 4736E	4.7	Enlist/STS

September Soybean variety trials at the Carvel Research and Education Center in Georgetown, DE. The site is irrigated using a linear system. Photo credit: Jarrod Miller

Experimental Details

	Carvel Rec – Georgetown, DE	Emerson Farms – Middletown, DE
Number of Entries	34	34
Target Population	150,000 seeds/acre	150,000 seeds/acre
Plot Length	17 ft	17 ft
Plot Width	5 ft (2 rows harvested)	5 ft (2 rows harvested)
Spacing	4 rows, 30 inch	4 rows, 30 inch
Planter	SRES Monosem Air Planter	SRES Monosem Air Planter
Harvester	Massey 8XP	Massey 8XP
Grain Analysis	Harvest Master H2 Classic	Harvest Master H2 Classic
Number of Replicatios	4	4
Planting Date	06/06/2025	06/12/2025
Harvest Date	11/06/2025	11/11/2025
Soil Type	Pepperbox/Rosedale Loamy sand	Reybold- Queponco complex- Silt Loam
Previous Crop	Corn	Corn
Tillage Practices	Turbo tilled	No-till
Fertilization	250 lb/A 0-0-60 on 05/05/2025	None
Herbicide	6-26-25 Basagran 1.5 pt/A, Reflex 1.5 pt/A, NIS .25 % v/v. 7-7-25 Clethodim 1 pt/A, NIS .25 % v/v	(Round-up 1qt/acre, Liberty 1qt/acre, Canopy 5oz/acre, Dual 1.5 pt/acre) on 06/12
Insecticide/Fungicid	7-15-25 Besiege 10 fl oz/A	None
Irrigation	Linear Irrigation	Dryland (none)

	Davis Farms – Harrington, DE
Number of Entries	34
Target Population	150,000 seeds/acre
Plot Length	17 ft
Plot Width	7.5 ft (3 rows harvested)
Spacing	4 rows, 30 inch
Planter	SRES Monosem Air Planter
Harvester	Gleaner
Grain Analysis	Harvest Master H2 Classic
Number of Replications	4
Planting Date	06/13/2025
Harvest Date	11/12/2025
Soil Type	Glassboro Sandy Loam
Previous Crop	corn
Tillage Practices	no-till
Fertilization	None
Herbicide	(Round-up 1qt/acre, Liberty 1qt/acre, Canopy 5oz/acre, Dual 1.5 pt/acre) on 06/02
Insecticide/Fungicide	None
Irrigation	Center Pivot

2025 Georgetown Full Season Soybean Variety Trial

Brand	Rank	Variety	Yield	LSD (α = 0.05)	Moisture %	Test Weight	Gross Income
NK	**1**	**NK44-Q5E3S**	**65.3**	**a**	**11.98**	**55**	**$ 620.62**
NK	**2**	**NK47-U1XFS**	**58.8**	**ab**	**11.75**	**56.05**	**$ 559.02**
Seed Consutants	3	SC7485E	56.8	bc	12	56.8	$ 540.36
USG	4	7496 XFS	56.8	bc	11.78	56.68	$ 540.14
Dynagr	5	S47ES36	55.6	bcd	12.13	56.65	$ 528.55
NK	6	NK43-K2E3S	55.5	bcd	11.68	55	$ 527.80
NK	7	NK47-G5E3S	55.5	bcd	11.95	55.9	$ 527.78
USG	8	7415 ET	55.1	bcd	11.58	54.88	$ 524.22
Growmark HiSoy	9	HS45E50	54.6	b-e	11.95	55.43	$ 519.42
USG	10	7486 ETS	54.1	b-e	12.08	55.65	$ 514.41
Xitavo	11	XO 4736E	53.4	b-f	11.98	55.35	$ 507.59
USG	12	7485 ETS	53.0	b-f	12.1	56.13	$ 503.77
Dynagr	13	S40EN54	52.7	b-f	11.65	54.75	$ 501.38
Growmark HiSoy	14	HS 48E40	52.5	b-f	12.33	56.45	$ 499.13
USG	15	7434 XF	52.2	b-f	12.3	56.23	$ 496.72
USG	16	7494 ETS	52.2	b-f	12.13	56.3	$ 496.01
Innvicti	17	B4553E	52.1	b-f	11.88	54.88	$ 495.49
Innvicti	18	B4744E	51.4	c-g	11.93	56.48	$ 489.15
Seed Consutants	19	SC7446E	51.2	c-h	11.8	56.55	$ 486.91
USG	20	7435 ET	51.0	c-i	11.98	56.4	$ 484.54
Seed Consutants	21	SC7465E	50.5	c-j	11.68	55.78	$ 480.41
Xitavo	22	XO 4255E	50.5	c-j	12	55.55	$ 480.06
USG	23	7456 ET	49.9	d-j	12.05	57.03	$ 474.40
Growmark HiSoy	24	HS47E32	49.4	d-k	11.65	55.6	$ 470.11
Dynagr	25	S38EN75	49.1	d-k	11.8	54.33	$ 467.27
Innvicti	26	B3805E	48.2	e-k	11.68	54.93	$ 458.45
Innvicti	27	B4075E	48.0	e-k	11.8	55.23	$ 456.66
Innvicti	28	B3934E	46.7	f-k	11.35	54.5	$ 444.54
Growmark HiSoy	29	HS41E20	46.5	f-k	11.65	54.18	$ 442.22
Xitavo	30	XO 4056E	45.2	g-k	11.6	55.15	$ 429.71
Xitavo	31	XO 4566E	44.4	h-k	11.68	55.7	$ 422.16
Xitavo	32	XO 4364E	44.1	ijk	11.73	55.68	$ 419.59
Innvicti	33	B4225E	43.8	jk	12.15	54.98	$ 416.79
Growmark HiSoy	34	HS43E30	42.7	k	11.73	55.45	$ 406.31

*Gross Income/acre is based off of commodity pricing for dry grain and does not factor in moisture/drying doc. Local Soybean Commodity Pricing - $12 per bushel. **Yield LSD = 6.89 bu/A.**

2025 Middletown Full Season Soybean Variety Trial

Brand	Rank	Variety	Yield	LSD (α = 0.05)	Moisture %	Test Weight	Gross Income
Xitavo	1	XO 4255E	68.9	-a	14.17	55.58	$ 655.15
Innvicti	2	B3805E	63.3	-a	14.72	55.25	$ 601.82
Xitavo	3	XO 4056E	61.2	-a	14.27	55.3	$ 582.10
USG	4	7435 ET	61.2	-a	14.5	55.4	$ 556.07
Seed Consutants	5	SC7465E	61.2	-a	14.34	56.05	$ 581.67
Growmark HSoy	6	HS45E50	61.1	-a	14.12	55.6	$ 580.68
USG	7	7496 XFS	61.0	-a	13.8	56.3	$ 580.44
USG	8	7434 XF	60.8	-a	14.75	56.18	$ 578.04
USG	9	7456 ET	60.7	-a	15.02	55.95	$ 577.29
Seed Consutants	10	SC7485E	60.7	-a	14	56.28	$ 576.90
Xitavo	11	XO 4364E	60.4	-a	14.35	55.78	$ 574.39
Dynagr	12	S40EN54	60.2	-a	14.35	55.25	$ 572.93
Innvicti	13	B4225E	59.3	-a	14.42	54.78	$ 564.13
Innvicti	14	B4553E	59.3	-a	14.55	54.63	$ 563.77
NK	15	NK44-Q5E3S	58.9	-a	14.55	55.6	$ 560.00
Dynagr	16	S47ES36	58.5	-a	14.47	57.05	$ 556.27
Innvicti	17	B4075E	58.5	-a	14.84	55.65	$ 556.02
Growmark HSoy	18	HS 48E40	57.7	-a	14.9	56.43	$ 548.87
Seed Consutants	19	SC7446E	56.5	-a	14.17	56.05	$ 537.49
Innvicti	20	B3934E	56.1	-a	14.52	55.18	$ 533.28
Xitavo	21	XO 4736E	55.0	-a	14.47	55.6	$ 522.77
USG	22	7486 ETS	54.9	-a	14.47	55.6	$ 522.44
NK	23	NK47-U1XFS	54.4	-a	14.22	55.58	$ 517.38
Xitavo	24	XO 4566E	54.4	-a	14.59	55.48	$ 517.03
USG	25	7415 ET	53.3	-a	14.77	55.33	$ 507.10
NK	26	NK43-K2E3S	53.1	-a	14.4	55.3	$ 504.95
Growmark HSoy	27	HS47E32	53.0	-a	14.65	55.85	$ 503.75
Growmark HSoy	28	HS41E20	52.7	-a	14.57	55.25	$ 501.06
USG	29	7485 ETS	51.6	-a	14.39	55.8	$ 490.43
Dynagr	30	S38EN75	50.3	-a	14.47	55.53	$ 478.28
Growmark HSoy	31	HS43E30	50.1	-a	14.56	55.8	$ 476.62
Innvicti	32	B4744E	49.5	-a	14.35	55.88	$ 470.69
NK	33	NK47-G5E3S	47.9	-a	14.55	55.88	$ 455.17
USG	34	7494 ETS	46.9	-a	14.62	55.85	$ 446.38

*Gross Income/acre is based off of commodity pricing for dry grain and does not factor in moisture/drying doc. Local Soybean Commodity Pricing - $12 per bushel. **Yield LSD = 12.08 bu/A.**

2025 Harrington Full Season Soybean Variety Trial

Brand	Rank	Variety	Yield	LSD (α = 0.05)	Moisture %	Test Weight	Gross Income
Seed Consutants	1	SC7465E	**39.5**	a	13.6	56.45	$375.91
USG	2	7456 ET	**38.5**	ab	13.6	56.03	$366.24
Seed Consutants	3	SC7446E	**37.7**	ab	13.48	56.58	$358.90
NK	4	NK44-Q5E3S	**36.6**	abc	13.65	55	$348.39
Innvicts	5	B4075E	**36.4**	a-d	13.18	52.25	$346.51
NK	6	NK47-G5E3S	**36.1**	a-e	13.83	56.45	$342.95
Seed Consutants	7	SC7485E	**35.1**	a-e	13.6	56.8	$333.56
Dynago	8	S47ES36	**34.9**	a-e	13.4	55.78	$332.07
Xitavo	9	XO 4255E	**34.6**	a-e	13.65	55.03	$328.91
Innvicts	10	B3934E	**34.6**	a-e	13.2	53.13	$328.69
USG	11	7494 ETS	**34.5**	a-e	13.8	56.43	$328.40
Xitavo	12	XO 4364E	**34.4**	a-e	14	56.13	$326.94
Innvicts	13	B4744E	**34.2**	a-f	13.5	56.15	$325.08
NK	14	NK47-U1XFS	**32.8**	a-g	13.18	55.38	$312.21
Xitavo	15	XO 4566E	**32.0**	a-g	13.9	56.33	$304.51
USG	16	7485 ETS	**32.0**	a-g	13.6	56.33	$304.00
USG	17	7415 ET	**31.8**	a-g	13.2	55.25	$302.13
Xitavo	18	XO 4736E	**30.9**	a-g	13.98	56.1	$294.07
Growmark HiSoy	19	HS47E32	**30.9**	a-g	13.95	56.48	$293.75
Xitavo	20	XO 4056E	**30.6**	a-g	13.73	55.83	$291.19
USG	21	7435 ET	29.9	b-h	13.9	56.5	$284.11
Innvicts	22	B4225E	29.6	b-h	13.85	55.48	$281.34
Growmark HiSoy	23	HS 48E40	27.9	c-i	13.85	55.9	$265.21
Growmark HiSoy	24	HS45E50	27.7	c-i	13.73	55.68	$262.98
USG	25	7486 ETS	27.6	d-i	14.03	56.45	$262.39
Dynago	26	S40EN54	27.6	d-i	13.63	55.88	$262.19
NK	27	NK43-K2E3S	27.5	d-i	13.43	55.05	$261.51
Innvicts	28	B4553E	27.0	e-i	13.93	56.23	$257.09
Innvicts	29	B3805E	25.3	f-i	13.88	56.28	$240.14
Growmark HiSoy	30	HS41E20	24.9	ghi	14.03	55.95	$236.99
USG	31	7496 XFS	21.3	hi	13.98	56.03	$202.85
USG	32	7434 XF	20.0	i	14.03	56.18	$189.95
GrowmarFS	33	HS43E30	19.6	i	13.58	57.03	$186.22
Dynago	34	S38EN75	19.3	i	13.88	55.78	$183.36

*Gross Income/acre is based off of commodity pricing for dry grain and does not factor in moisture/drying doc. Local Soybean Commodity Pricing - $12 per bushel. **Yield LSD = 9.04 bu/A.**

SUMMARY

At the **Georgetown location**, soybean yields ranged from 42.7 to 65.3 bu/ac, with an *LSD of 6.89 bu/ac* at the 0.05 probability level, allowing for meaningful separation among entries. NK44-Q5E3S was the highest-yielding variety at 65.3 bu/ac and served as the benchmark for this site. Several varieties—including NK47-U1XFS, SC7485E, 7496 XFS, S47ES36, NK43-K2E3S, NK47-G5E3S, and 7415 ET—fell into overlapping statistical groupings with the top entry, indicating they were not significantly different in yield and together form the practical top-performing group under Georgetown conditions.

Beyond the top tier, a large middle group of **Georgetown** varieties produced yields from the mid-50s down into the upper-40s bu/ac with substantial overlap in statistical groupings, indicating limited yield separation among these entries at this location. Lower-yielding varieties were clearly separated from the top group and consistently fell below 47 bu/ac. Grain moisture and test weight were uniform across entries, suggesting yield differences were driven by genetic and environmental responses rather than harvest timing or grain quality.

At the **Middletown site**, soybean yields ranged from approximately 46.9 to 68.9 bu/ac, with a relatively large *LSD of 12.08 bu/ac*, indicating greater field variability and reduced ability to statistically separate individual entries. XO 4255E was the highest-yielding variety at 68.9 bu/ac, followed closely by B3805E and XO 4056E, with many additional varieties clustering in the low- to mid-60 bu/ac range. Because of the large LSD value, all entries fell into the same statistical grouping, meaning that most could not be separated, due to the variability across plot response. This does not mean that the top yielding variety was not the best, but that we could not separate them statistically.

In **Middletown**, a large number of varieties yielded between 60 and 55 bu/ac, indicating good overall adaptation of the tested genetics to this environment. Grain moisture and test weight were consistent across entries, suggesting yield differences primarily reflected field variability rather than harvest effects. These results highlight the importance of interpreting Middletown data in conjunction with other locations, as this site was effective for identifying high yield potential but less effective for distinguishing small genetic differences among varieties.

At the **Harrington site**, soybean yields were considerably lower than the other locations, ranging from approximately 19.3 to 39.5 bu/ac, with an *LSD of 9.04 bu/ac*. SC7465E was the highest-yielding variety at 39.5 bu/ac and ranked first overall, though several varieties fell into overlapping statistical groups with the top entry, indicating limited separation among the upper performers. Varieties such as 7456 ET, SC7446E, NK44-Q5E3S, B4075E, and NK47-G5E3S were numerically close and not statistically different from the top-yielding variety, forming the practical upper tier under Kent conditions. A large portion of the Harrington trial clustered between the low-30s and mid-30s bu/ac,

with substantial overlap in statistical groupings, suggesting that environmental stress played a dominant role in limiting yield potential at this site. Several varieties dropped below 30 bu/ac and were clearly separated from the top group, reflecting reduced adaptation or greater sensitivity to site-specific stresses. Grain moisture and test weight were relatively consistent across entries, indicating yield differences were primarily driven by genetic response to challenging growing conditions rather than harvest or grain quality factors. Overall, the Kent site highlighted varietal differences under stress, but the breadth of overlapping statistical groups reinforces the importance of evaluating these results alongside higher-yielding environments when making final variety selections.

When comparing sites for overall yield performance, clear environmental gradients emerged that help explain the observed differences. **Middletown** was the highest-yielding location overall, despite being the only non-irrigated site, suggesting that the Reybold–Queponco silt loam soils and favorable moisture conditions supported strong yield potential. **Georgetown** followed closely as a high-yield environment, aided by irrigation but with loamy sand soils that likely limited water- and nutrient-holding capacity relative to Middletown. **Harrington** was consistently the lowest-yielding site, reflecting the combined effects of sandier Glassboro soils, no-till management, and greater in-season stress. Although all locations used similar planting populations, plot dimensions, and equipment, differences in soil texture, tillage, planting date, and irrigation clearly had a larger influence on yield potential than trial design factors.

Looking across varieties, several consistent patterns emerged despite large yield differences among sites. Varieties that ranked near the top at **Georgetown** generally fell within the broad upper-yield group at **Middletown**, indicating strong yield potential across both irrigated and rainfed, high-yield environments. Importantly, a smaller subset of varieties—such as NK44-Q5E3S and NK47-G5E3S—also maintained relatively strong performance at the Harrington site, suggesting better yield stability under stress. In contrast, varieties that ranked in the bottom tier at **Harrington** were often mid- to lower-performing at the higher-yield sites as well, indicating limited adaptability. Overall, while environment was the primary driver of yield differences among locations, consistent variety response across sites allowed identification of genetics with broader adaptation versus those better suited only to high-yield conditions.