

Pennsylvania Soybean Contest 2021 Report



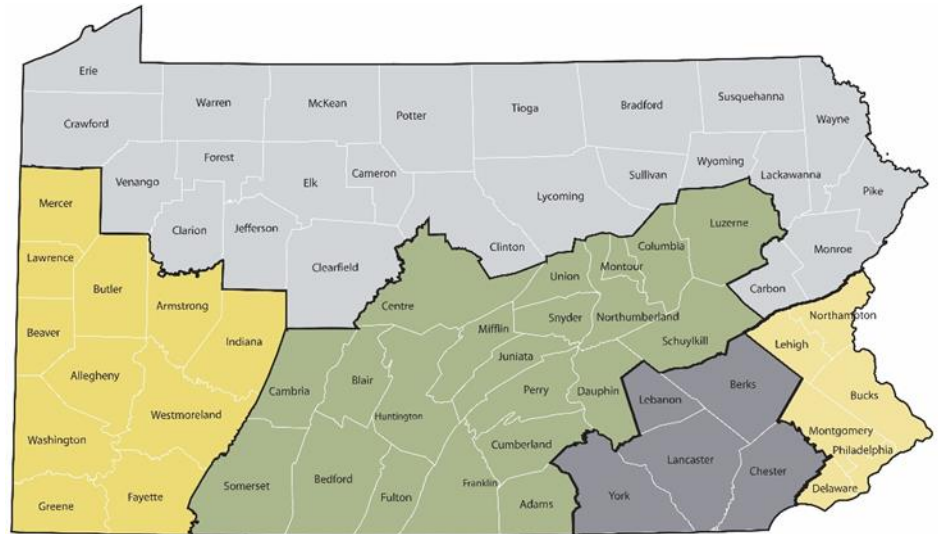
**Prepared by Delbert G. Voight, Jr., Senior Extension Educator
& Andrew Frankenfield, Senior Extension Educator**

Supported and directed by the Pennsylvania Soybean Board

THE PENNSYLVANIA SOYBEAN CONTEST is designed to focus farmer attention on agronomic and management skills that will increase soybean profitability. If you know what it takes to produce great soybeans, you could be a winner in the Pa. Soybean Contest. The state is divided into five regions. The top producer in each region will win an educational trip to the Commodity Classic.

ELIGIBILITY: Any bona-fide farmer who farms in Pennsylvania and grows 5 acres or more of soybeans within the state is eligible.

PRODUCTION: For the state-wide and regional yield contest winners, participants must use non-irrigated soybeans, but are not restricted as to variety, fertilization, spacing or other cultural practices.



PRIZES! In addition to bragging rights, the state champion receives an educational trip for two (the winner and one other individual* with a direct financial interest in their farming operation) to the Commodity Classic. (Up to \$2,500.) The top yield winner in each region receives an educational trip for the winner to the Commodity Classic. (Up to \$1,500.) Special awards are presented for irrigated bean yield and for oil/protein quality.

HOW TO ENTER: If you would like to enter the Pennsylvania Soybean Contest, you must register by September 1. Online registration is available at www.pasoybean.org. Harvest report forms must be postmarked by November 15.

You may also request a registration form from your local Penn State Extension Educator, or by contacting:

Penn State Extension-Lebanon County
PA Soybean Contest c/o Del Voight
2120 Cornwall Road, Suite 1
Lebanon, PA 17042-9777
717-270-4391

Penn State Extension-Montgomery County
PA Soybean Contest c/o Andrew Frankenfield
1015 Bridge Road, Suite H
Collegeville, Pennsylvania 19426-1179
610-489-4315

* Subject to approval by the Pa. Soybean Board. All decisions of the Board are final. Awards are non-transferable.



Thanks to our Harvest Supervisors

Supervisor	Position
Justin Brackenrich	Agronomy Educator, Penn State Extension Butler County
Brittany Clark	Agronomy Educator, Penn State Extension Franklin County
Andrew Frankenfield	Agronomy Educator, Penn State Extension Montgomery County
William Gallagher	Retired County Agent, Penn State Extension
Jeff Graybill	Agronomy Educator, Penn State Extension Lancaster County
Randy Harrold	FFA/Ag Ed Instructor, Laurel School District, New Castle, PA
Phil Haussener	FFA/Ag Ed Instructor, Cedar Crest HS, Lebanon, PA
Chris Hinder	Agronomist, The Mill
Zach Larson	Agronomy Educator, Penn State Extension Blair County
Dwane Miller	Agronomy Educator, Penn State Extension Schuylkill County
Leon Ressler	Agronomy Educator, Penn State Extension Lancaster County
Eric Rosenbaum	Agronomist, Rosetree Consulting
John Rowehl	Retired Agronomy Educator, Penn State Extension
Angela Snyder	FFA/Ag Ed Instructor, Fayette County
Mason Tate	Agronomy Educator, Penn State Extension Bradford County
Delbert Voight	Agronomy Educator, Penn State Extension Lebanon County
Pierce Wilson	Agricultural Coordinator, Fayette County Conservation District
Brett Young	Treasurer, Mercer County Ag Land Preservation Board

Rank of Contest Entries

South Central

Rank	Name	Yield	County	Brand	Cultivar
1	Daryl Alger	105.98	Lebanon	Stine	37EC20
2	Eric Charles	104.22	Lancaster	Pioneer	31A95BX
3	Mike Shearer	103.86	Lancaster	Pioneer	31A95 BX
4	Sam Conley	96.78	Lancaster	Seed Consultants	7381E
5	Merle Stoltzfus	93.75	Lancaster	Hubner	2919R2X
6	Elvin Reiff	93.73	Lancaster	Hubner	2919R2X
7	Brian Krieder	92.01	Lebanon	Pioneer	31A95BX
8	Kristen Grumbine	91.56	Lebanon	Pioneer	31A95BX
9	Darren Grumbine	90.15	Lebanon	Asgrow	35XF1
10	Joshua Towson	86.22	York	Pioneer	33A24X
11	Greg Gemmill	83.29	York	Channel	3519
12	Robert Buser	82.96	York	Pioneer	30A46PR
13	Ethan Buser	82.68	York	Pioneer	
14	Dale Herr, Jr.	80.58	Lancaster	Dyna-Gold	S31EN91
15	Herman Manbeck	77.20	Berks	Pioneer	31A95BX

Central

Rank	Name	Yield	County	Brand	Cultivar
1	Eric Meyers	84.11	Franklin	Pioneer	42A96X
2	Mark Rohrbach	81.56	Columbia	Pioneer	31A95BX
3	Leslie Bowman	77.87	Franklin	Pioneer	37T51PR
4	Robert Reed	70.46	Northumberland	Pioneer	31A95BX



West

Rank	Name	Yield	County	Brand	Cultivar
1	Henry Sniezek	108.14	Lawrence	Seed Consultants	SC7341E
2	Richard Burd	78.09	Fayette	Pioneer	32T26E
3	Rick Telesz	71.32	Lawrence	FS HiSoy	30X50
4	Randal Smith	71.23	Butler	Pioneer	26T57E
5	Tony Miller	70.01	Indiana	Pioneer	29A25X
6	Jeremy Hough	69.56	Westmoreland	Local Seed	3005E3
7	Thomas M Hoovler	66.82	Mercer	Asgrow	28X61
8	Robert Dorazio	54.95	Fayette	Pioneer	28T14E

Northern

Rank	Name	Yield	County	Brand	Cultivar
1	Raymond(Jerry) Martin	74.34	Tioga	Pioneer	26A61X
2	Vernon Martin	73.01	Tioga	Pioneer	26A61X
3	Justin Zimmerman	65.54	Bradford	Pioneer	20T64E

Southeast

Rank	Name	Yield	County	Brand	Cultivar
1	Nathan Crooke	112.43	Bucks	Channel	2918Xtend
2	Noah Detwiler	78.47	Montgomery	Chemgro	3751RSX



Grain Quality				
Name	Protein %	Oil %	Protein + Oil %	Seeds/lb
Rick Telesz	38.2	18.2	56.4	2,157
Richard Burd	37.6	18.4	56.0	2,284
Thomas Hoovler	37.5	18.4	55.9	2,567
Noah Detwiler	36.4	19.4	55.8	2,156
Tony Miller	37.1	18.6	55.7	2,554
Dale Herr, Jr	35.5	20.1	55.6	3,032
Ethan Buser	36.3	19.3	55.6	2,336
Mark Rohrbach	34.7	20.6	55.3	2,157
Joshua Towson	34.5	20.8	55.3	2,182
Jeremy Hough	35.2	20.0	55.2	2,438
Daryl Alger	34.9	20.3	55.2	2,126
Nathan Crooke	36.1	19.1	55.2	2,564
Herman Manbeck	34.0	21.1	55.1	2,562
Robert Buser	35.1	19.8	54.9	2,377
Justin Zimmerman	36.3	18.6	54.9	2,416
Darren Grumbine	34.5	20.3	54.8	2,600
Vernon Martin	35.6	19.1	54.7	2,119
Robert Reed	33.9	20.8	54.7	2,622
Merle Stoltzfus	34.7	20.0	54.7	2,473
Raymond Martin	36.3	18.4	54.7	2,259
Elvin Reiff	34.7	19.9	54.6	2,304
Robert Dorazio	35.4	19.2	54.6	2,172
Sam Conley	35.3	19.2	54.5	3,110
Henry Snizek	34.2	20.1	54.3	2,686
Leslie Bowman	34.5	19.7	54.2	2,345
Greg Gemmill	35.3	18.8	54.1	2,482
Mike Shearer	32.9	21.1	54.0	2,195
Eric Meyers	33.9	19.9	53.8	2,278
Randal Smith	34.1	19.5	53.6	3,125
Eric Charles	31.9	21.6	53.5	2,362
Kristen Grumbine	32.6	20.6	53.2	2,571
Brian Krieder	32.1	20.6	52.7	2,940
Average	35.0	19.7	54.8	2,404



Yield Comparisons	Ave. Bu/A
Mean Yield	83.54 bu/a
No-till (n=23, 74% of entries)	80.00 bu/a
Min-till (n=5, 16% of entries)	89.77 bu/a
Conventional till (n=3, 10% of entries)	97.39 bu/a
Drill (n=12, 39% of entries)	80.27 bu/a
Corn planter (n=19, 61% of entries)	85.15 bu/a
Planted April 1 to 10 (n=4, 16% of entries)	97.98 bu/a
Planted April 21 to 30 (n=11, 44% of entries)	85.27 bu/a
Planted May 1 to 10 (n=3, 12% of entries)	77.00 bu/a
Planted May 11 to 20 (n=6, 24% of entries)	70.59 bu/a
Planted May 21 to 30 (n=1, 4% of entries)	78.09 bu/a
Rows 10" or less (n=9, 29% of entries)	81.71 bu/a
Rows 11" to 20" (n=15, 48% of entries)	85.9 bu/a
Rows 30" (n=7, 23% of entries)	79.7 bu/a
No Foliar Fungicide or Insecticide Applied (n=8, 29% of entries)	69.46 bu/a
Foliar Insecticide Applied (n=1, 4% of entries)	54.95 bu/a
Foliar Fungicide Applied (n=4, 14% of entries)	85.70 bu/a
Combination of Foliar Fungicide and Insecticide (n=15, 54% of entries)	88.82 bu/a

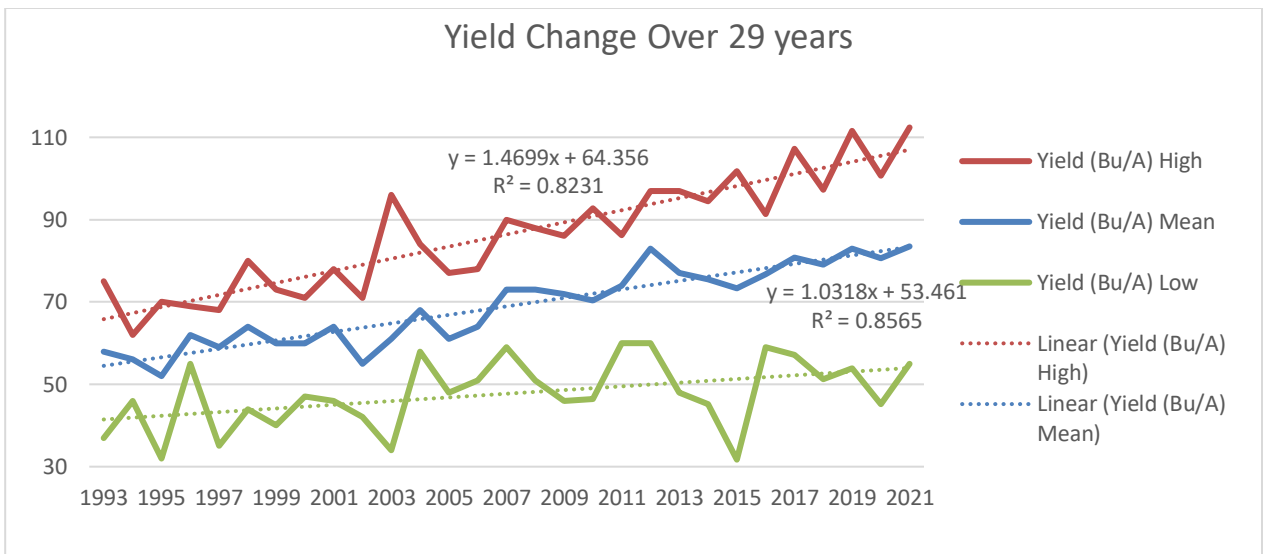


Production Information	
Seed Treatment (n=24, 89% of entries)	80.95 bu/a
No Seed Treatment (n=3, 11% of entries)	85.82 bu/a
Rhizobia Inoculation (n=26, 90% of entries)	82.40 bu/a
No Rhizobia Inoculation (n=3, 10% of entries)	80.36 bu/a
Dry Inoculation (n=6, 23% of entries)	87.56 bu/a
Liquid Inoculation (n=4, 15% of entries)	79.98 bu/a
Pre-Inoculation (n=16, 62% of entries)	81.08 bu/a
Calibrate Seed Equipment Yes 71% No 29%	81.82 bu/a 82.98 bu/a
pH <6.0 (5.9) (7%) pH 6.0-6.3 (17%) pH 6.4-7.5 (76%)	88.85 bu/a 87.00 bu/a 83.44 bu/a
Low P (11%) Med P (29%) High P (61%)	87.15 bu/a 77.63 bu/a 85.50 bu/a
Low K (25%) Med K (32%) High K (43%)	85.82 bu/a 80.93 bu/a 83.91 bu/a
No Foliar Fertilizer (67%) Foliar Fertilizer (33%)	81.81 bu/a 83.81 bu/a
Nitrogen (32%) No Nitrogen (68%)	83.27 bu/a 81.47 bu/a
Herbicide	100% utilized Glyphosate 100% Used a post emergent herbicide 94% Used a preemergent herbicide 78% of those used a residual product pre 36% used a multiple MOA post 25% utilized Engenia or Enlist

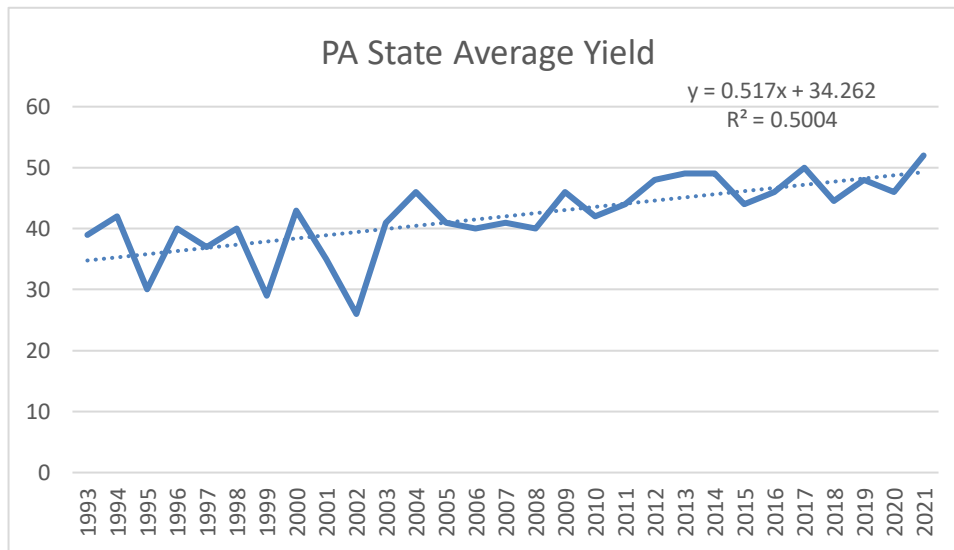
Production Information	
Yield Limiting Factors	slugs, dry, deer, lodging, disease, late harvest
Average Seeds Per Pound	2,724
Average Seed Drop	158,500
Average Plants at Harvest	127,000 20% loss from planting
Average Pod Count	62 pods
Average Harvest Loss	1.06 bu/a
Average Harvest Date	10/20/21
Cover crop	67% planted a cover crop or small grain crop 72% planted wheat, 11% planted rye

Soybean Management Practices - Regional Award Winners

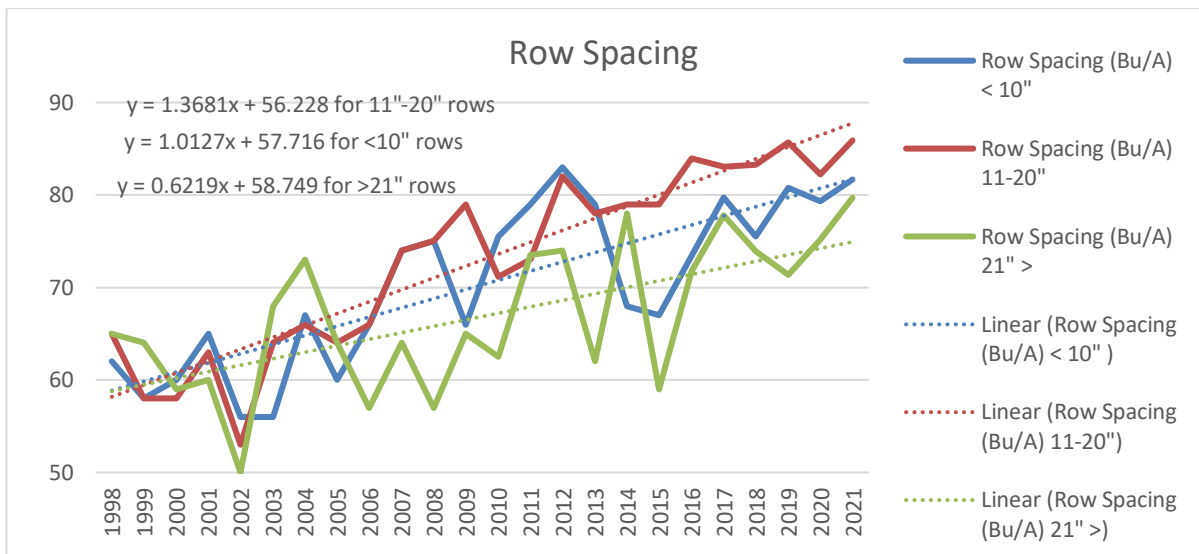
Region	South Central	Central	West	Northern	Southeast
Winner	Daryl Alger	Eric Meyers	Henry Sniezek	Raymond (Jerry) Martin	Nathan Crooke
County	Lebanon	Franklin	Lawrence	Tioga	Bucks
Previous Crop	Corn	Corn	Corn	Corn	Grass Hay
Row Width	20"	30"	30"	15"	7.5"
Tillage Type	Min-Till	No-Till	Conventional	No-Till	Conventional
Variety	Stine 37EC20	Pioneer 42A96X	Seed Consultants SC7341E	Pioneer 26A61X	Channel 2918 xtend
Seeding Date	4/8/21	4/28/21	4/26/21	4/28/21	4/28/21
Seeding Rate	160,000	140,000	120,000	158,000	165,000
Final Stand	141,300	54,000	103,000	69,600	139,200
Seed Treatment	Exceleron	Pioneer Premium	None	Pioneer Premium	Fungicide/ Bionematicide
Inoculation	Liquid	Pre	Dry	none	Dry
Fungicide	Approach Prima	Miravis Neo	Approach Prima	Miravis Neo	Delaro
Insecticides	Mustang	Lamcap II	Mustang Maxx	Lambda	None
Pre-Herbicide	Roundup/Sharpen	Thundermaster	Metribuzin/Sonic	Canopy	None
Post-Herbicide	Liberty/Clethodim	Roundup	Glyphosate/ Enlist	Roundup	1 st Sequence/Engenia 2 nd Roundup
Date of Harvest	11/3/21	10/21/21	11/4/21	10/13/21	10/1/21
Yield	105.98	84.11	108.14	74.34	112.43
Moisture %	17.9	14.90	15.6	19.5	12.10
Ave Pod Count	38	160	112	88	53
Harvest Loss	0.5 bu/a	2.25 bu/a	1.5 bu/a	0.3 bu/a	0.5 bu/a
pH	6.8	7.2	5.9	6.5	6.2
P	Optimum	Optimum	Below Optimum	Optimum	Optimum
K	Optimum	Optimum	Below Optimum	Optimum	Below Optimum
Organic Matter		4.8	2.3		2.7
Biostimulant	No	No	No	No	No
Foliar Fertilizer	No	Yes	Yes	No	Yes
Cover Crop	Rye	Wheat for grain	Rye	Wheat	Wheat for grain



Conclusion: Over a 29-year period, the mean of all entries went up by 1 bushel per year. Over the same period the winning yield went up by nearly 1.5 bushels per year.

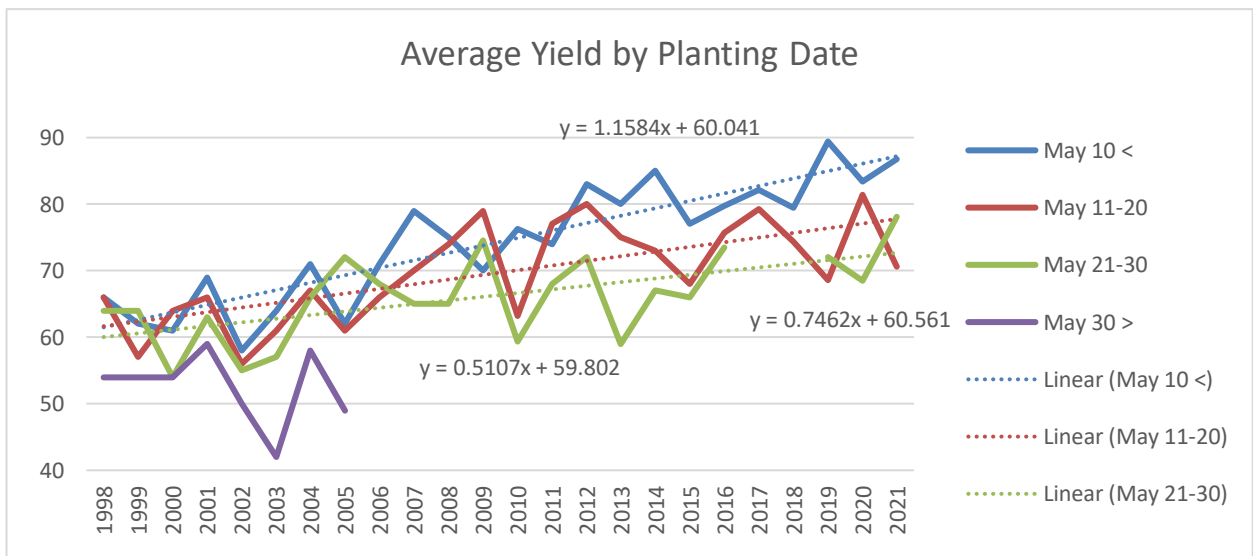


Since 1993 the Pennsylvania average soybean yield has increased about 1/2 bushel per year.



Since 2008 at least 50% of the entries in the contest were planted in 15" rows with a trend of yielding 1.37 bushels more per year compared to drilled soybeans planted in rows less than 10" which are trending up at a rate of 1.01 bushels per year.

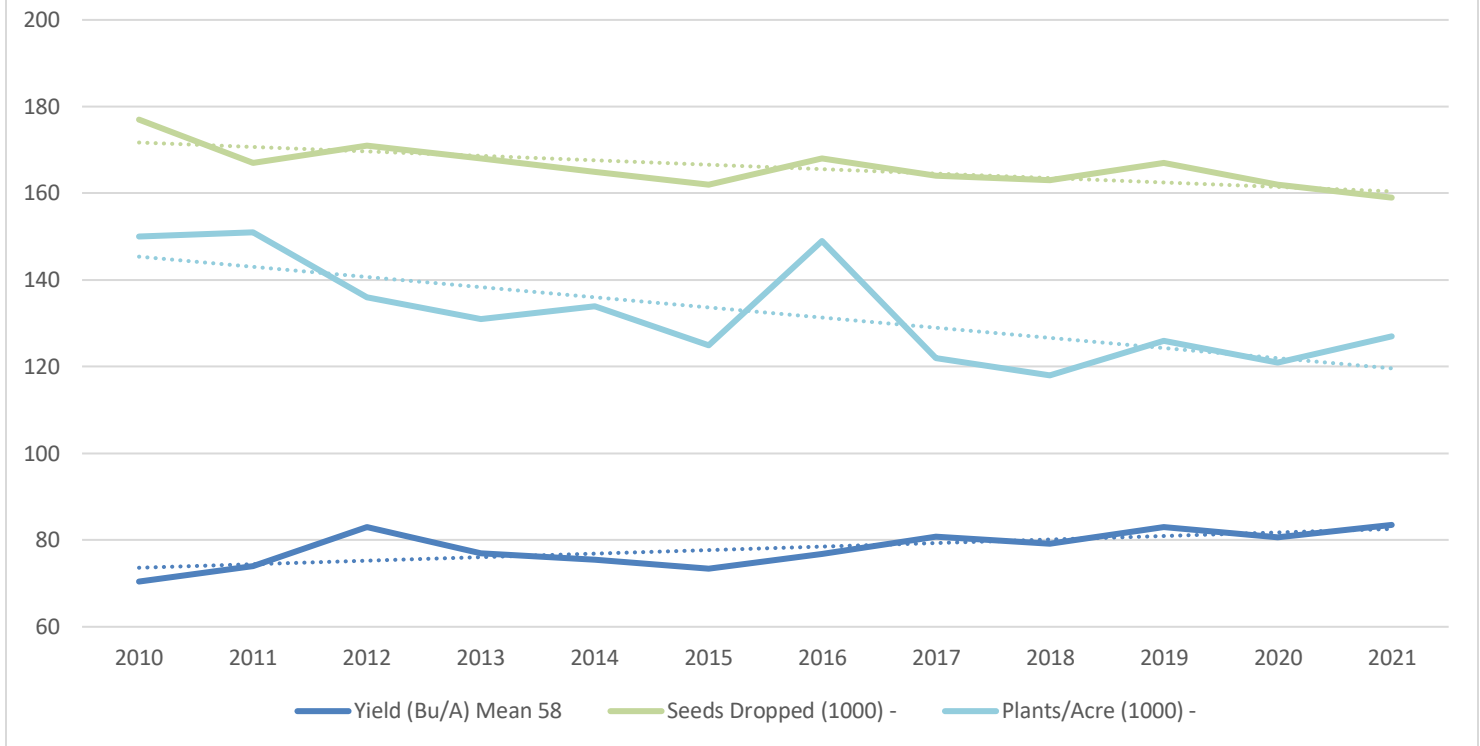
Wide row soybeans make up about 15% of the entries and are trending below drilled and 15" soybeans at a rate of 0.62 bushels per year.



Since 1998 the average yield of entries planted before May 10 increased 1.16 bushel per year compared to 0.75 bushels from May 10 - 20 and 0.51 bushels from May 21-30.

Since 2005 very few entries were planted after May 30.

Changes in Seeding Rate, Harvest Population and Yield



Conclusion: Over a 12-year period, there has been a decrease in seeding rate by approximately 20,000 seeds per acre and a decrease in the harvest population by approximately 25,000 plants per acre, all while increasing yield 10 bushels per acre in the same period.

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This publication is available in alternative media on request.

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Photos by United Soybean Board