



Soybean Management and Cover Crops



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croptechcafe.org/soybeansandcovercrops

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Overview

- Soybean Variety Selection
 - Yield
- Relative Maturity
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- Planting Date
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- Soybean Management and Cover Crops
 - Yield
 - Cover crop seeding after soybeans





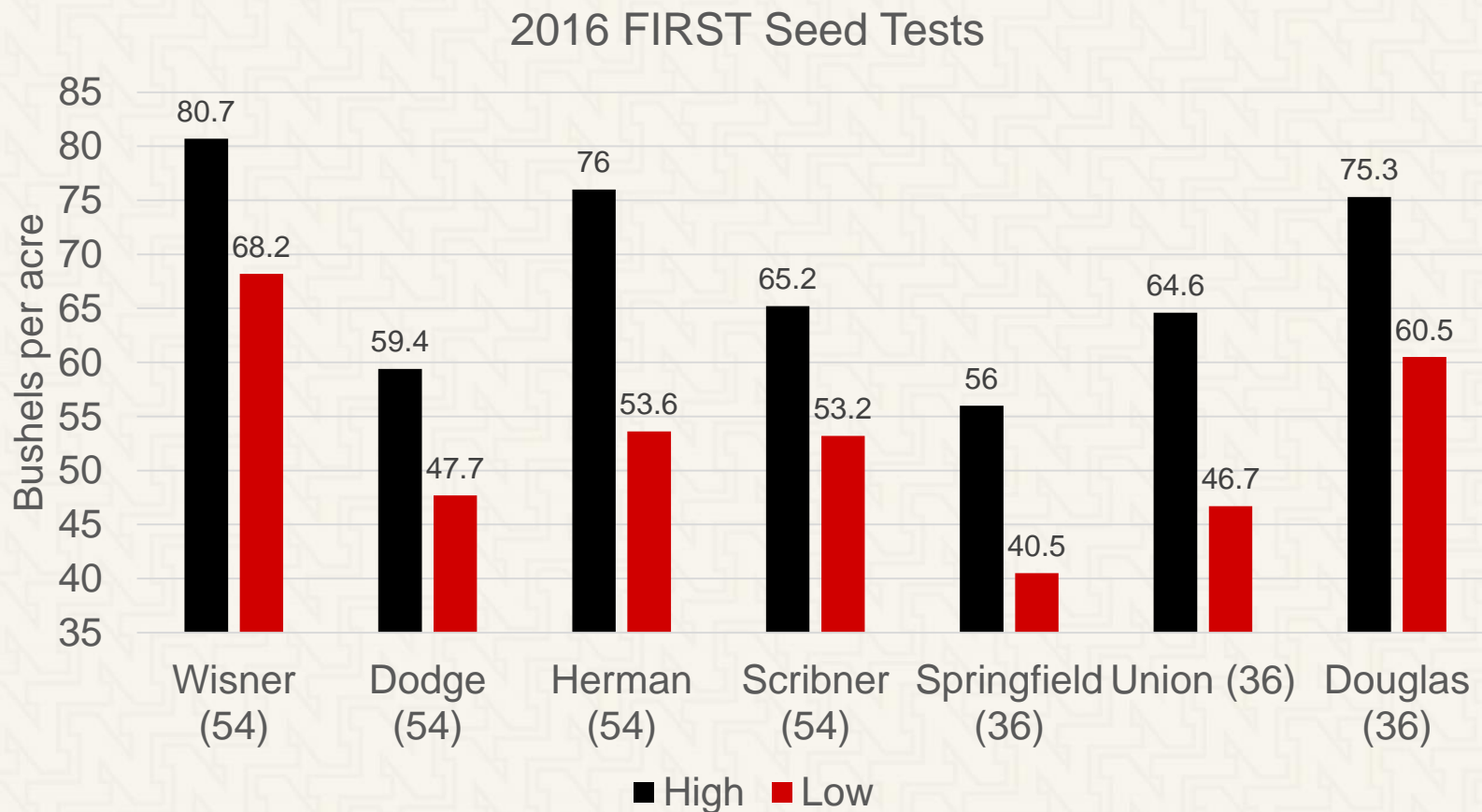
Soybean Variety Selection



Where does soybean variety selection rank in importance for potential yield difference compared to other management practices?

Rank	Management Factor	Yield Difference (bu/ac)
1	Variety Selection	15
2	Planting Date	8
3	Weed Control	8
4	Phosphorus Fertility	5
5	Crop Rotation	5
6	Row Spacing	3
7	Seeding Rate (90-180k)	0 to 3
8	Rye cover crop	0 to 3

What was the yield difference between soybean varieties in 2016?



Source: First Seed Tests

2016 Soybean Top 30 Performance Summary for Nebraska Northeast [NENE]

All-Season Test

Maturity Group 2.6 - 3.4

S2016NENE

Top 30 of 54

For Gross Income (Sorted by Yield), (12) Replication Average

Company/Brand	Product/Brand†	Technol.†	Mat.	SCN Resist.	Seed Trt.†	Yield Bu/A	Protein %	Oil %	Moisture %	Lodging %	Gross Income	Dodge Herman	Scribner Wisner		
Rob-See-Co	Innotech IS2636 §	RR2Y,ST	2.6	R	CCB,Me	67.0	33.0	19.5	12.4	21	\$586	56.7	76.0	61.2	73.9
LG Seeds	C3070R2	RR2Y	3.0	R	CCB	65.9	34.3	19.1	12.1	21	\$577	57.2	69.2	61.0	76.0
Prairie Brand	PB-2788R2	RR2Y,ST	2.7	R	CCB,In	65.7	34.4	18.3	12.3	15	\$575	56.3	63.7	62.1	80.7
Stine	29RE22 §	RR2Y,ST	2.9	R	SFI	65.6	34.6	18.6	12.2	11	\$574	56.9	64.2	62.7	78.7
Jacobsen Seed	J847NR2	RR2Y	2.8	R	AC,IL,PV	65.2	33.9	18.9	12.3	9	\$571	57.1	63.6	63.4	76.7
Latham	L3184R2	RR2Y	3.1	R	CCB,Me	65.0	34.3	18.5	12.2	3	\$569	58.6	68.5	61.3	71.6
NK Brand	S30-C1 §	RR2Y	3.0	R	CCB,Me	64.9	32.7	19.5	12.2	6	\$568	56.8	71.9	58.4	72.6
Pioneer	P25T51R §	RR	2.5	R	EE,G	64.7	34.2	19.4	12.4	4	\$566	54.1	66.3	61.8	76.5
Latham	L2645R2	RR2Y	2.6	MR	CCB,Me	64.2	33.7	19.0	12.2	8	\$562	56.0	64.8	60.4	75.7
Titan Pro	TP-26X16	RRX	2.6	R	IS	64.1	34.4	18.5	12.2	10	\$561	50.1	60.4	65.5	80.4
Titan Pro	TP-26R35	RR2Y	2.6	MR	IS	64.0	34.0	18.8	12.4	14	\$560	55.9	62.3	62.6	75.3
Rob-See-Co	Innotech IS3115 §	RR2Y	3.1	MR	CCB,Me	63.9	33.4	19.4	12.4	18	\$559	55.7	65.9	58.7	75.3
LG Seeds	C2605R2	RR2Y	2.6	S	CCB	63.8	34.0	18.7	12.1	4	\$558	56.4	61.9	62.5	74.4
Prairie Brand	PB-2600R2	RR2Y	2.6	MR	CCB,In	63.7	33.8	18.7	12.2	4	\$557	55.5	62.0	62.4	74.7
Pioneer	P28T08R §	RR	2.8	R	None	63.7	33.5	20.3	12.1	16	\$557	50.8	68.0	61.1	74.8
Hefty	H29X6	RRX	2.9	MR	DST	63.7	34.8	18.8	12.2	16	\$557	51.7	67.4	64.6	71.1
Titan Pro	TP-34X86	RRX	3.4	R	IS	63.6	33.7	19.2	12.2	3	\$557	57.2	60.9	63.7	72.5
Hefty	H34X7	RRX	3.4	MR	DST	63.2	33.7	18.9	12.2	3	\$553	57.2	59.0	63.4	73.0
Stine	33RH20 §	RR2Y,ST	3.3	R	SFI	63.2	33.8	18.7	12.6	7	\$553	55.0	61.1	61.5	75.0
NK Brand	S29-G4 §	RR2Y,ST	2.9	R	CCB,Me	63.2	33.3	19.5	12.2	8	\$553	53.5	63.2	63.0	73.1
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Latham	E3048R2	RR2Y	3.0	R	SS+	63.1	34.9	18.4	12.2	6	\$552	48.9	67.9	59.0	76.7
Pioneer	P27T03R §	RR	2.7	R	EE,G	63.1	33.7	19.5	12.1	9	\$552	55.8	61.5	58.1	77.0
Prairie Brand	PB-2876R2	RR2Y	2.8	R	CCB,In	62.8	33.4	19.2	12.2	4	\$550	51.5	61.1	62.4	76.0
Dyna-Gro	S33XT07	RRX	3.3	R	ACi	62.7	35.1	18.1	12.3	3	\$549	58.7	61.5	60.9	69.8
Jacobsen Seed	J964NR2X	RRX	3.4	R	AC,IL,PV	62.7	34.0	18.8	12.3	3	\$549	56.6	60.5	63.4	70.1
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Hefty	H26X7	RRX	2.6	MR	DST	62.4	33.8	18.7	12.0	8	\$546	50.2	59.7	61.8	78.0
Averages =						62.5	34.2	18.8	12.2	10	\$547	54.2	61.2	60.6	74.2
LSD (0.10) =						3.7	0.9	0.7	ns	13		3.2	4.4	2.9	4.2
LSD (0.25) =						2.6	0.6	0.5	ns	9		2.2	3.0	2.0	2.9

Corey Rozenboom

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Previous years average yield for region, 52.8 bu/a, 4 yrs

Yield & Income Factors:

Base Moisture = 13.0%

Shrink = 1.3

Drying = \$0.020

Prices = \$8.75 GMO; \$8.75 non-GMO

† See last page for additional information. Dark shaded row identifies the check product found in early- and full-season tests. **Bold** results are significantly above test average by LSD (0.10). **ns** = not significantly different; ‡ = 2 reps.

Additional reports available at www.firstseedtests.com.

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Report Date: 10/24/2016

Revised: 11/10/2016

Protein and oil content results added

Other considerations

- Look for proven yield performance
 - Farm, Third Party, and Company Data
- Match traits with the field and your management practices
 - SDS, SCN, Phytophthora, etc.
 - Lodging
- Use a range of maturities
 - Reduce risk from one or two hot dry weeks in August



Soybean Relative Maturity



Relative Maturity (RM) & Harvest

- General guidelines
 - 0.1 change in RM = 1 day
 - So changing from a 3.5 to 2.5 RM is about 10 days less to reach maturity and harvest

Soybean Relative Maturity*

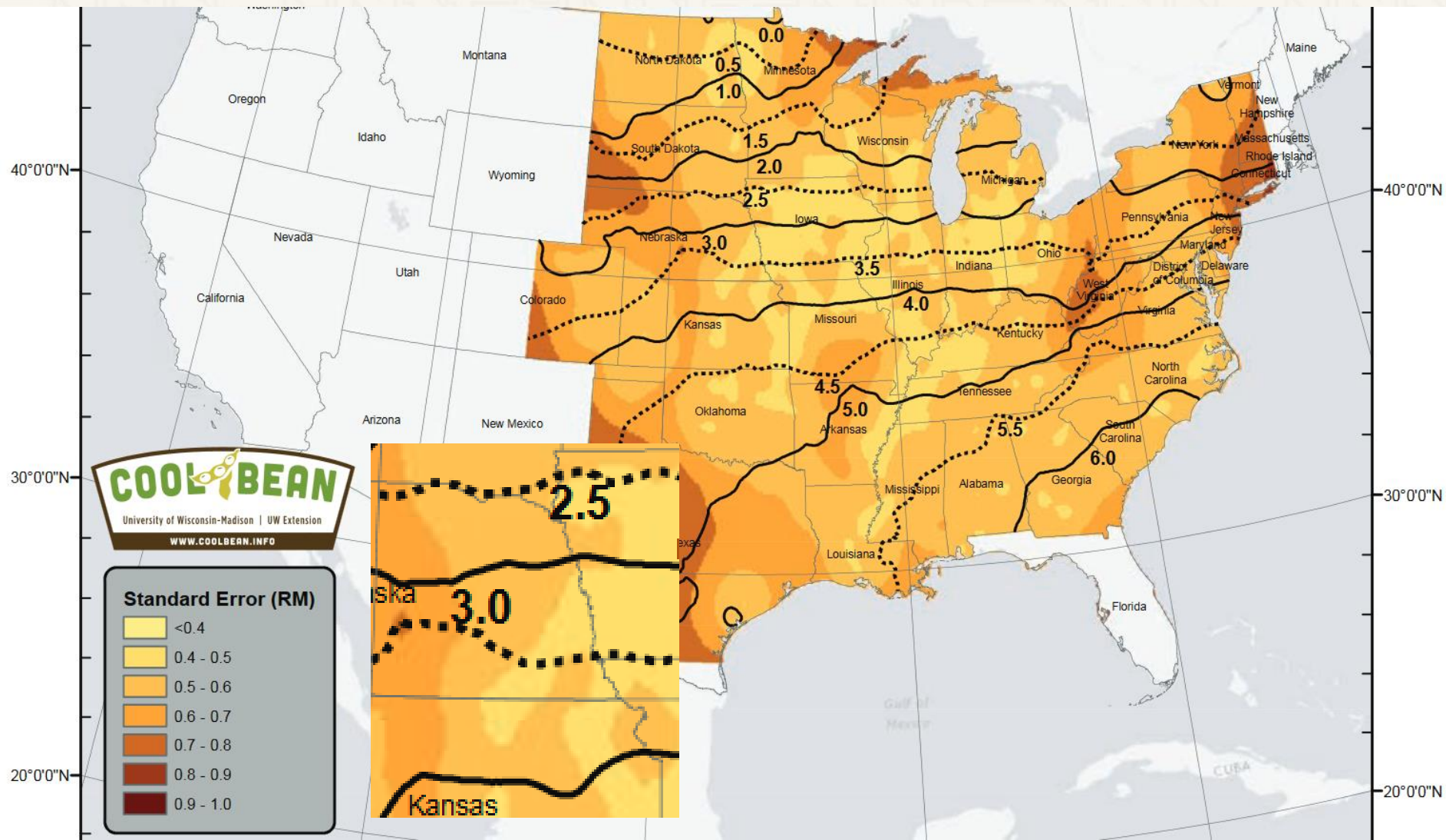
RM	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2
Date	9/25	9/25	9/27	9/28	9/29	9/30	10/1	10/2	10/3

*Michigan Soybean Performance Reports (2009-2013)

http://msue.anr.msu.edu/news/should_you_plant_earlier_maturing_soybean_varieties

Soybean Maturity Groups

http://www.coolbean.info/library/documents/SoybeanMG_2016_FINAL.pdf



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LSD (0.25) =	2.6	0.6	0.5	ns	9		2.2	3.0	2.0	2.9

Previous years average yield for region, 52.8 bu/a, 4 yrs

Yield & Income Factors: Base Moisture = 13.0% Shrink = 1.3 Drying = \$0.020 Prices = \$8.75 GMO; \$8.75 non-GMO

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Relative Maturity (RM) and Yield

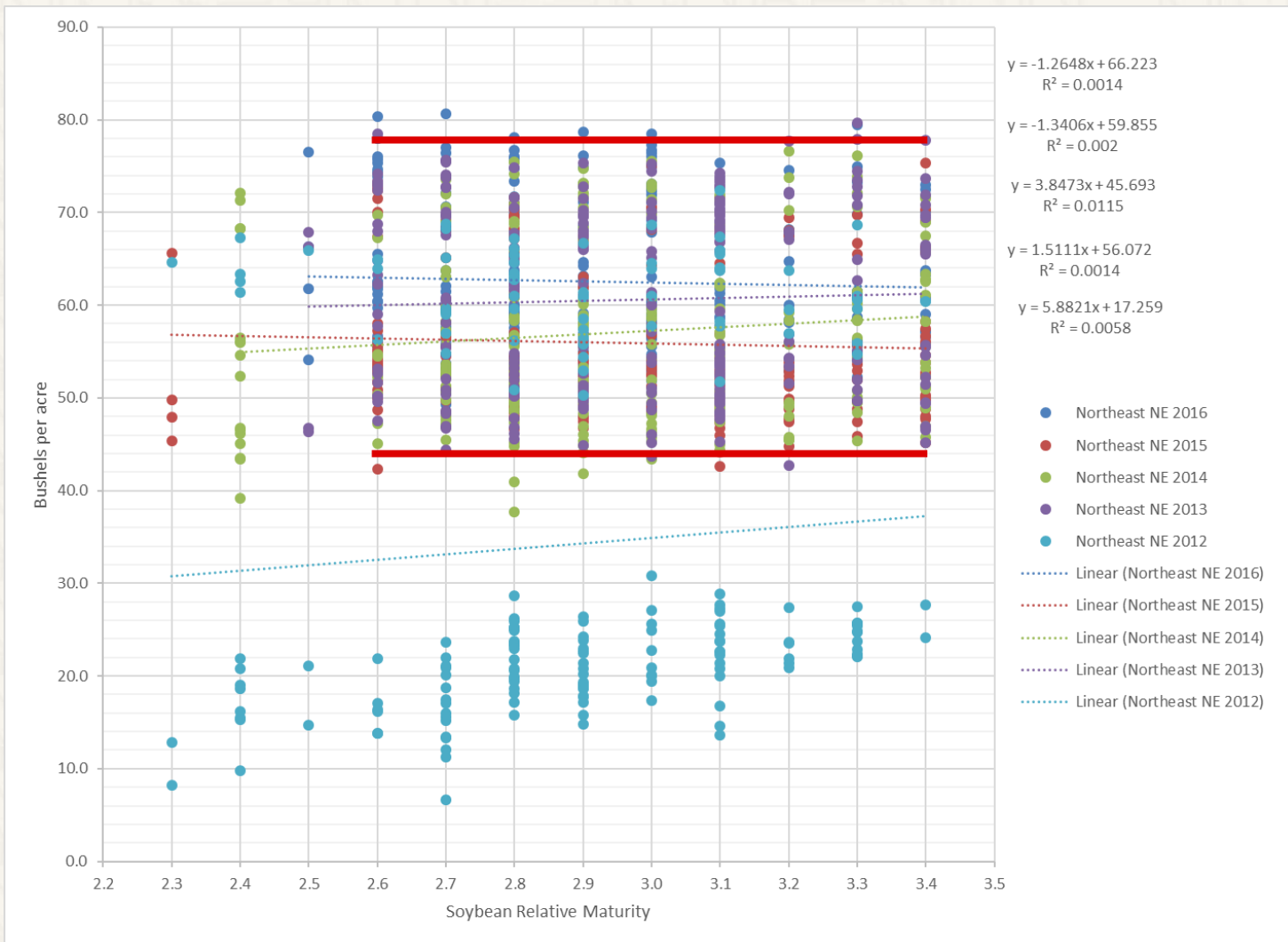
2016 Northeast NE Top Performing Varieties in FIRST Seeds Tests (54)

RM	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.4
# of varieties	1	6	1	2	2	2	2	1
Yield (bu/ac)	64.7	64.5	65.7	64.5	64.7	65.4	64.5	63.6

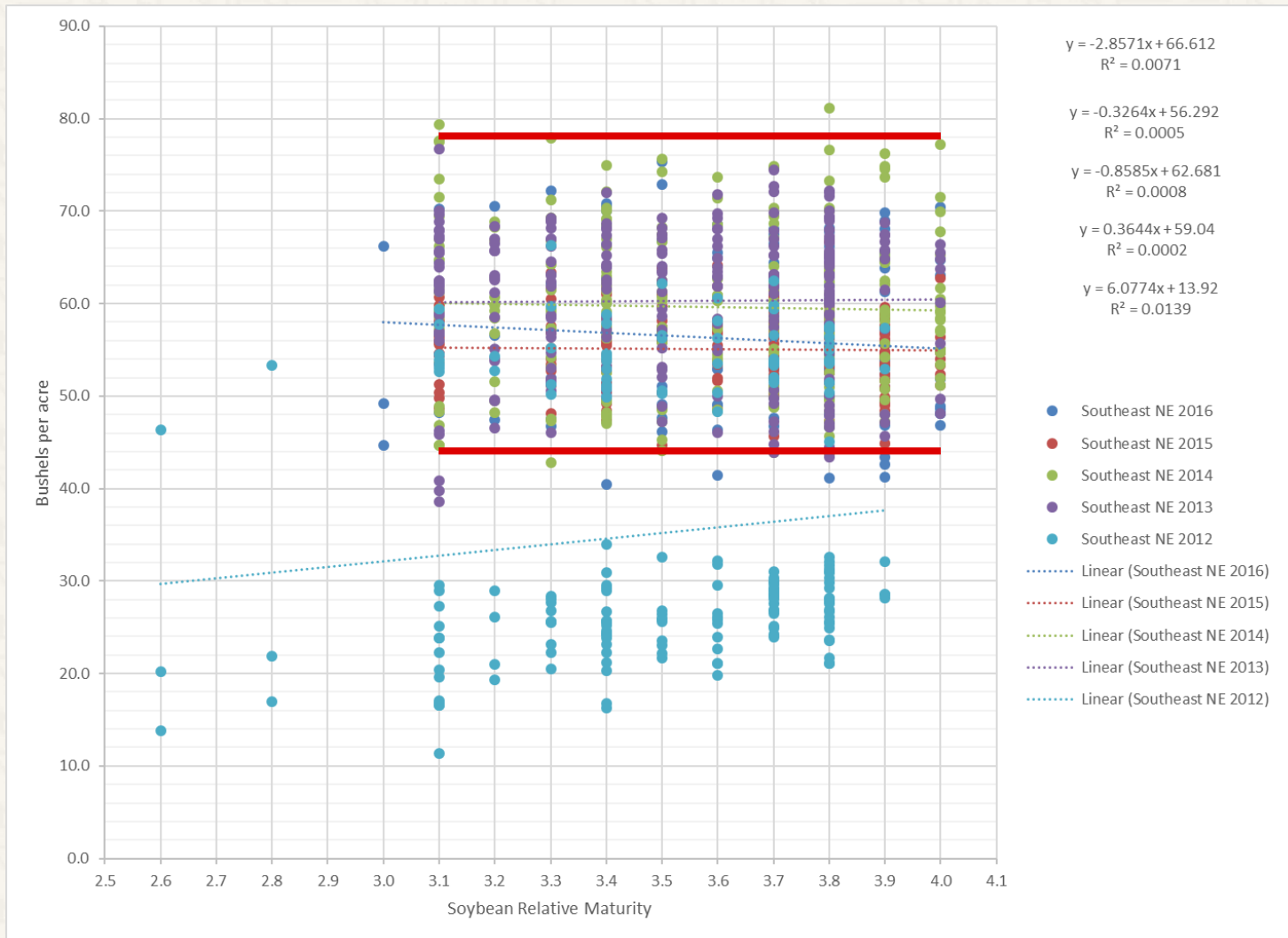
2016 Southeast NE Top Performing Varieties in FIRST Seeds Tests (36)

RM	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
# of varieties	1	1	1	5	2	1	3	3	3	1
Yield (bu/ac)	61.0	58.2	57.0	58.9	58.6	56.8	56.6	57.4	57.0	56.0

FIRST Seeds Test (2012-2016) Northeast Nebraska



FIRST Seeds Test (2012-2016) Southeast Nebraska





Planting Date



Planting Date and Maturity

Picture Date: 6/26/2003



Picture Date: 6/24/2004



Average response of 14 varieties — 3.0 to 3.9 MG

Source: <http://cropwatch.unl.edu/why-soybean-planting-date-matters>

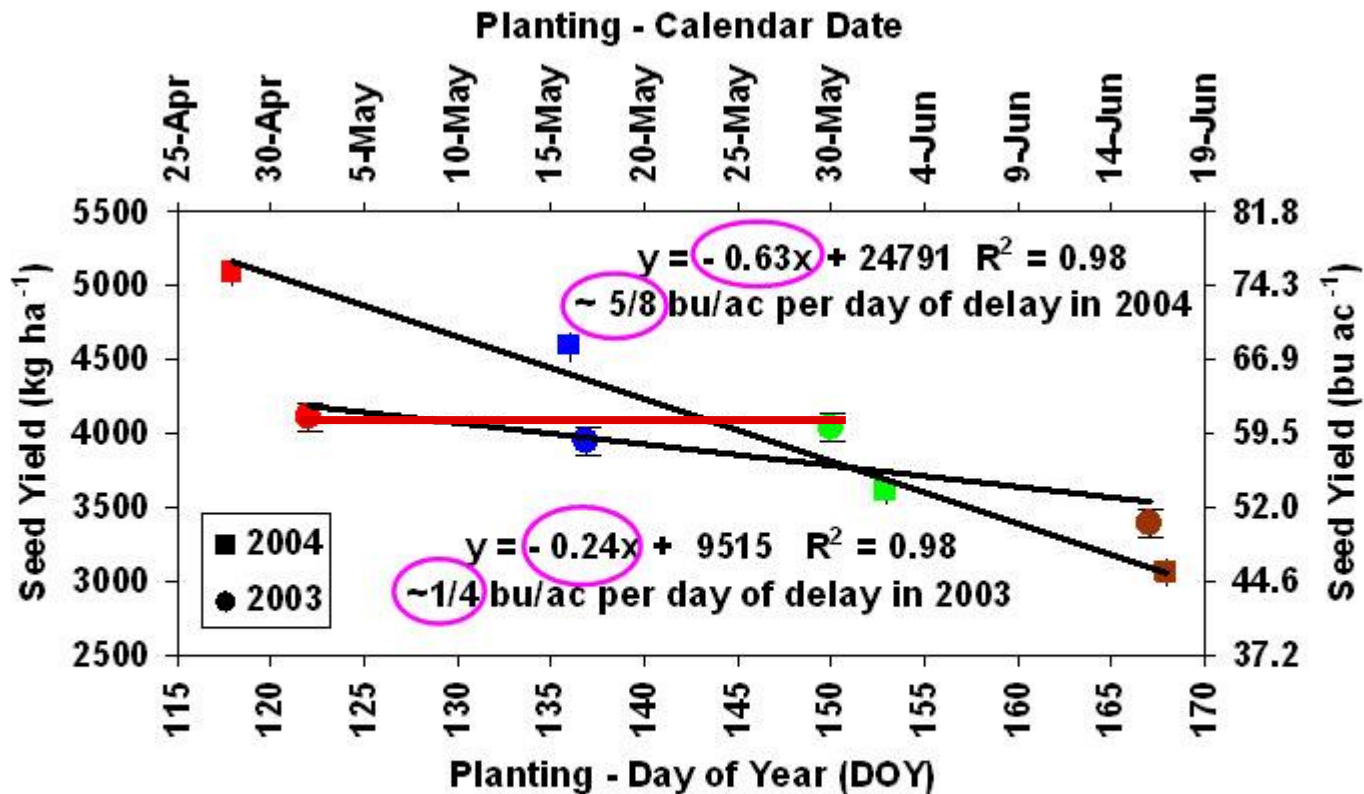
Planting Date and Maturity

2003		Days after planting		2004		Days after planting	
Planting Date	V1	R8	Date of R8	Planting Date	V1	R8	Date of R8
May 2	32	158	Oct 7	April 28	26	146	Sep 21
May 17	24	148	Oct 12	May 16	23	136	Sep 29
May 30	19	136	Oct 13	June 2	17	130	Oct 10
June 16	12	120	Oct 14	June 17	17	118	Oct 13

Average response of 14 varieties — 3.0 to 3.9 MG

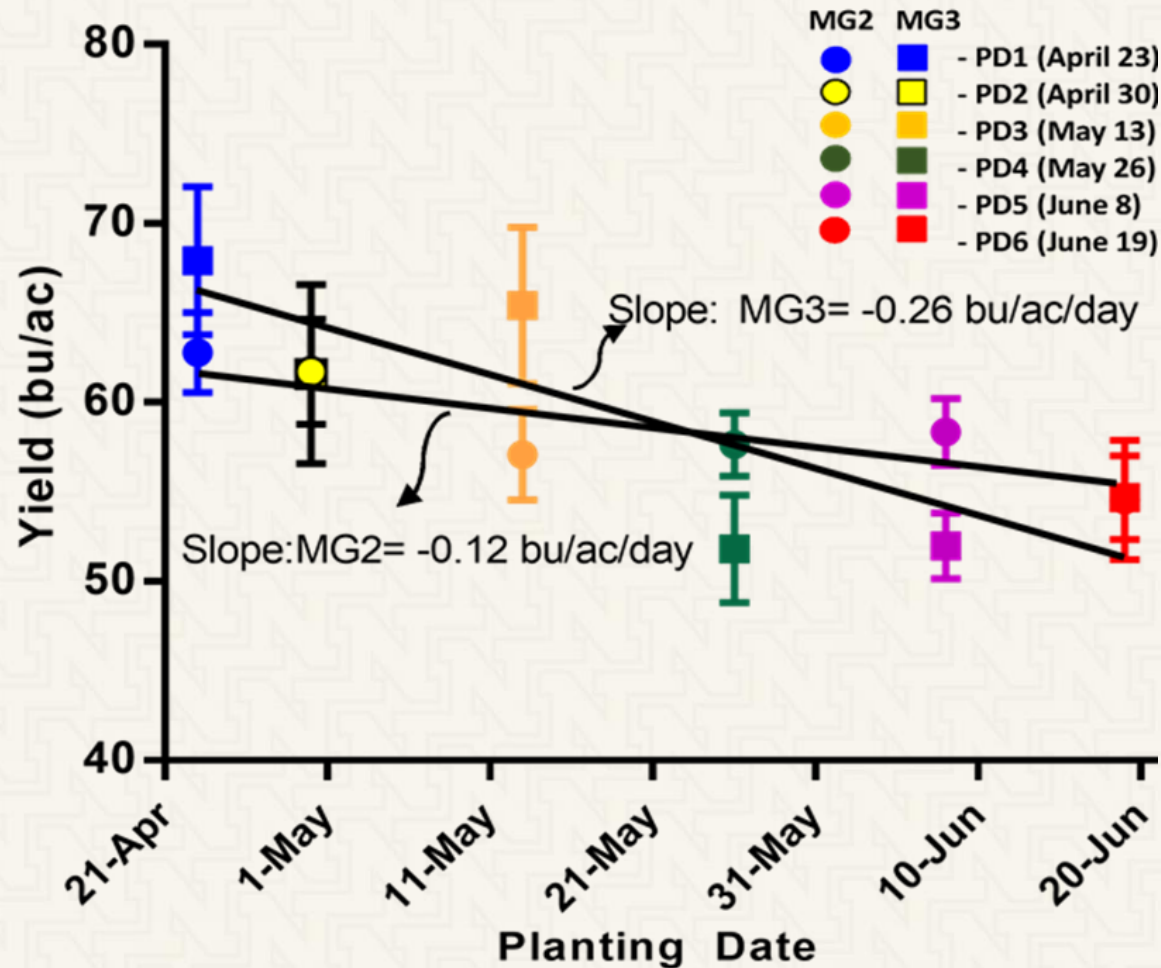
Source: <http://cropwatch.unl.edu/2016/adjusting-delayed-soybean-planting>

Planting Date and Yield – 2003 & 2004



The red, blue, green, and brown vertical lines denote four planting dates in 2003 and 2004 of: (1) late April / early May, (2) mid-May, (3) late May / early June, and (4) mid-June, respectively.

Planting Date and Yield - 2015



Source: <http://cropwatch.unl.edu/2016/early-bird-gets-worm-benefits-early-soybean-planting>



Soybean Management and Cover Crops



Nebraska On-Farm Research Network Results

Year	County	Irrigated	Yield Check	Yield w/Rye Cover Crop	Significance
2010	Saunders	No	71	67	NS
2010	Saunders	No	56B	59A	0.04
2010	Saunders	No	68	68	NS
2011	Lancaster	No	62	59	NS
2013	Lancaster	No	56	54	NS
2014	Saunders	Yes	64	64	NS

resultsfinder.unl.edu

Cover Crop Planting Window After Soybeans

- Earlier maturity (RM & Planting Date) and harvest
 - Spread out harvest and target 13% harvest moisture
- Create longer window for planting cover crops
- Increase opportunity for earlier drilling date
- Increase fall cover crop growth

Summary

- High yielding shorter season varieties a good option on some acres
- Early planting, early harvest, early cover crop establishment
- Cover crops before soybeans – yield neutral to positive



 croptechcafe.org/soybeansandcovercrops
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Thank You!