

Nebraska

N EXTENSION

COVER CROP CONFERENCE

Tuesday, Feb. 14, 2017

at the Eastern Nebraska Research
and Extension Center
(located at the University's Agricultural Research
and Development Center near Mead, Nebraska)

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Soybean Management and Cover Crops



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Washington
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croptechcafe.org/soybeansandcovercrops

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Overview

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



N EXTENSION



Soybean Variety Selection



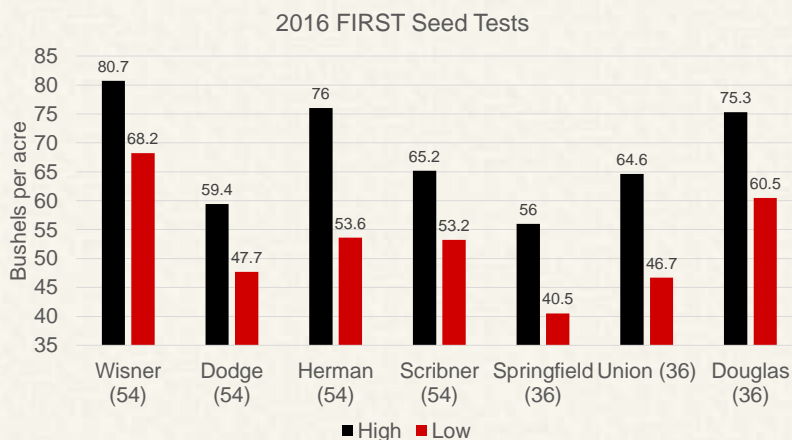
Where does soybean variety selection rank in importance for potential yield difference compared to other management practices?

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

Source: <http://cropwatch.unl.edu/why-soybean-variety-critical-improving-farm-yield>



What was the yield difference between soybean varieties in 2016?



Source: First Seed Tests



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

first Genesys, independent research of seed traits & performance

Genesys, a Division of F&W, Inc., Geneva, IL

All-Season Test
Maturity Group 2.8 - 3.4
COOLSEAS

For Green Soybean (Sorted by Yield) [13] Test-Season Average
Top 30 of 54

Company/Brand	Product/Brand	Trait/ST	PH	SCN Susc	Seed Tr 1	Yield Bu/ct	Protein %	Oil %	Moisture %	Lodging %	Grain Income	Stalks	Harvest	Stover	
Top-See-Co	Inventech 82636 \$	RR2Y-ST	3.0	R	COB.Me	87.8	33.0	19.8	12.4	21	\$588	56.7	76.6	61.2	
LG Seeds	C2070R2	RR2Y	3.0	R	COB	85.9	34.3	19.1	12.1	21	\$577	57.2	68.2	61.0	
Prince Brand	PS-2188R2	RR2Y-ST	2.7	R	COB.In	85.7	34.4	18.3	12.3	16	\$575	56.3	63.7	62.1	
Stone	248E22 \$	RR2Y-ST	2.9	R	SFI	85.6	34.6	18.6	12.2	11	\$574	56.9	64.2	62.7	
Jacobson Seed	J847NR2	RR2Y	2.8	R	AC.L.PV	85.2	33.9	18.9	12.3	9	\$571	57.1	63.6	63.4	
Latham	L3184R2	RR2Y	3.1	R	COB.Me	85.0	34.3	18.5	12.2	5	\$569	56.8	68.5	61.3	
NK Brand	S20-C1 \$	RR2Y	3.0	R	COB.Me	84.9	32.7	19.8	12.2	6	\$568	56.8	71.9	58.4	
Flower	F25151R \$	RR	2.5	R	EE.G	84.7	34.2	19.4	12.4	4	\$568	54.1	66.3	61.5	
Latham	L2545R2	RR2Y	2.6	MR	COB.Me	84.2	33.7	19.0	12.2	6	\$567	56.0	64.5	60.4	
Team Pro	TP-26116	RR2	2.6	R	IS	84.1	34.6	18.5	12.3	10	\$561	56.1	60.4	66.6	
Team Pro	TP-26122	RR2Y	2.6	MR	IS	84.0	34.0	18.9	12.4	14	\$560	55.9	62.3	62.5	
Top-See-Co	Inventech 82315 \$	RR2Y	3.1	MR	COB.Me	83.9	33.4	19.4	12.4	18	\$558	55.7	65.9	58.2	
LG Seeds	C2005R2	RR2Y	2.9	S	COB	83.8	34.0	18.7	12.1	4	\$558	56.4	61.9	62.5	
Prince Brand	PS-2033R2	RR2Y	2.9	MR	COB.In	83.7	33.6	18.7	12.2	4	\$557	55.9	62.2	62.4	
Flower	F28738R \$	RR	2.8	R	None	83.7	33.6	20.3	12.1	16	\$557	57.8	66.0	61.1	
Hefty	H2588	RR2	2.9	MR	DST	83.7	34.8	18.8	12.2	16	\$557	51.9	67.4	64.6	
Team Pro	TP-24028	RR2	3.4	R	IS	83.6	33.7	18.2	12.2	3	\$557	57.2	60.5	63.7	
Hefty	H2467	RR2	3.4	MR	DST	83.2	33.7	18.9	12.2	3	\$555	57.2	59.0	63.4	
Stone	S29-G5 \$	RR2Y-ST	3.1	R	SFI	83.2	33.8	18.7	12.6	7	\$550	56.0	61.1	61.5	
NK Brand	S29-G4 \$	RR2Y-ST	2.9	R	COB.Me	83.2	33.3	19.8	12.2	6	\$550	55.5	63.2	63.0	
NK Brand	S29-A6 \$	RR2Y	2.6	R	COB.Me	83.2	34.5	18.3	12.1	13	\$550	51.5	64.5	61.1	
Latham	E2348R2	RR2Y	3.0	R	SP-	83.1	34.9	18.4	12.2	6	\$550	48.9	67.9	59.0	
Flower	F27753R \$	RR	2.7	R	EE.G	83.1	33.7	19.8	12.1	6	\$550	56.8	61.3	58.1	
Prince Brand	PS-2035R2	RR2Y	2.8	R	COB.In	82.9	33.4	18.2	12.2	4	\$550	51.9	61.1	62.4	
Dyna-Cro	S234737	RR2	3.2	R	ACI	82.7	38.1	18.1	12.3	3	\$549	58.7	61.5	63.5	
Jacobson Seed	J848NR2R	RR2	3.4	R	AC.L.PV	82.7	34.0	18.8	12.3	3	\$549	56.6	60.5	63.4	
Dyna-Cro	S234736	RR2Y	3.0	R	COB	82.6	38.3	18.2	12.2	3	\$548	55.6	57.6	58.5	
Hefty	H2187	RR2	3.1	MR	DST	82.6	33.9	18.6	12.2	9	\$548	55.3	60.1	63.8	
Stone	S29F22 \$	RR2Y	3.2	R	SFI	82.6	33.7	18.8	12.1	3	\$547	56.9	60.0	64.7	
Hefty	H2067	RR2	2.6	MR	DST	82.4	33.8	18.7	12.0	6	\$546	56.2	58.7	61.6	
						Extension -	83.8	34.2	18.8	12.2	18	\$547	54.2	61.2	60.6
						COOLSEAS -	83.7	33.9	18.7	12.2	13	5	2.2	4.4	2.9
						Top 30 of 54 -	83.8	34.2	18.8	12.2	18	5	2.2	3.0	2.9

Cony Roseboom
cony.roseboom@brvseedbank.com, (315) 630-8888

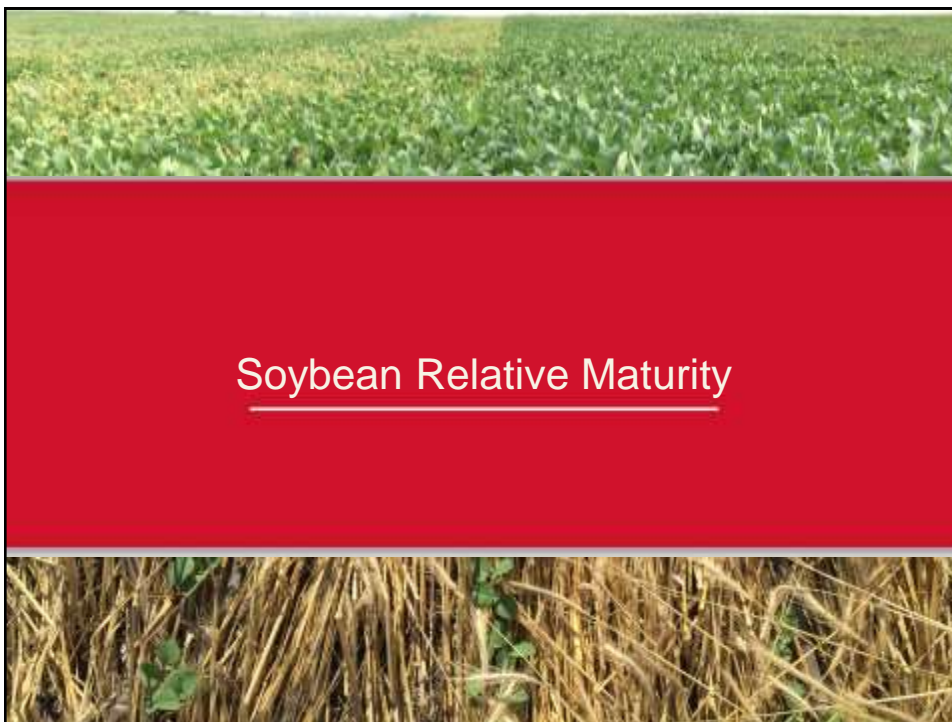
Field & Income Factors: Base Moisture = 12.0% Weed = 1.2 Drain = \$0.005 Price = \$4.75 (GRN) \$4.75 (non-GRN)

1 Use net price for additional information. Dark shaded row reflects the check product found in early and fall season trials. Bold results are significantly above test average (p < 0.05), ns = not significantly different. \$ = 1.2 bu/ct
Additional trials available at www.brvseedbank.com ©2016 All rights reserved by Agriscience Seed Contracting, Inc.

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



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

All-Season Test: Maturity Group 2.8 - 3.4

Top 30 of 54

For Green Issues (Starts by Yield), (1) Application Average

Company/Brand	Product/Brand	Tech/ST	RM	SCN	Seed	Yield	Protein	Oil	Moisture	Grain	Crude	Oil/Grain	Harvest	SPDR	Water
				Rate	Type	bu/acre	%	%	%	%	%	%	bu/acre	bu/acre	bu/acre
Bob-See-Cie	3000WH H20R \$	RR2Y-ST	3.0	R	COB.Me	63.8	33.0	18.8	12.4	21	338	56.7	76.6	61.2	73.9
L.G. Swells	C200R2	RR2Y-ST	3.0	R	COB	63.9	34.3	18.1	12.1	21	337	57.2	68.2	61.0	76.0
Prince Brand	PS-218R2	RR2Y-ST	2.7	R	COB.H	65.7	34.4	18.3	12.3	16	337	56.3	63.7	62.1	80.7
Stone	25R22 \$	RR2Y-ST	2.9	R	SFI	65.6	34.6	18.6	12.2	11	337	56.9	64.2	62.7	78.7
Jacobson Seed	J84TR2	RR2Y	2.8	R	ACILPV	65.2	33.9	18.8	12.5	9	321	57.1	63.6	63.4	76.7
Latham	L318R2	RR2Y	3.1	R	COB.Me	65.0	34.3	18.5	12.2	5	330	56.6	68.5	61.3	71.6
NK Brand	S30-C1 \$	RR2Y	3.0	R	COB.Me	64.9	32.7	18.8	12.2	6	330	56.8	71.9	68.4	72.6
Pioneer	P25T5H \$	RR	2.5	R	EE.G	64.7	34.2	19.4	12.4	4	330	54.1	66.2	61.9	76.5
Latham	L26KR2	RR2Y	2.6	NR	COB.Me	64.2	33.7	19.0	12.2	6	332	58.0	64.8	63.4	75.7
Titan Pro	TP-26416	RRK	3.6	R	IS	64.1	34.6	18.5	12.2	10	331	58.1	68.4	68.6	80.4
Titan Pro	TP-26920	RR2Y	3.6	NR	IS	64.0	34.0	18.8	12.4	14	330	55.9	62.3	62.0	79.3
Bob-See-Cie	3000WH H2113 \$	RR2Y	3.1	NR	COB.Me	63.9	33.4	18.4	12.4	18	330	55.7	66.9	58.7	75.3
L.G. Swells	C200R2	RR2Y	2.9	R	COB	63.8	34.0	18.7	12.1	4	330	56.4	61.9	62.5	74.4
Prince Brand	PS-205R2	RR2Y	2.6	NR	COB.H	63.7	33.9	18.7	12.2	4	327	56.5	62.0	62.4	74.7
Pioneer	P28T5H \$	RR	2.4	R	Norm	63.7	33.0	20.3	12.1	16	327	55.9	68.0	61.1	74.6
Hefly	H2885	RRK	2.9	NR	DST	63.7	34.8	18.8	12.2	16	327	57.7	67.4	64.6	71.1
Titan Pro	TP-24026	RRK	3.4	R	IS	63.6	33.7	18.2	12.2	3	327	57.2	60.9	63.7	72.6
Hefly	H3607	RRK	3.4	NR	DST	63.2	33.7	18.9	12.2	3	325	57.2	59.0	63.4	73.0
Stone	S39-G5 \$	RR2Y-ST	3.3	R	SFI	63.2	33.8	18.7	12.6	7	325	56.0	61.1	61.5	75.0
NK Brand	S29-G4 \$	RR2Y-ST	2.9	R	COB.Me	63.2	33.3	19.8	12.2	6	325	53.3	63.2	63.0	73.1
NK Brand	S28-A6 \$	RR2Y	2.8	R	COB.Me	63.2	34.5	18.3	12.1	13	325	53.8	64.9	61.1	75.6
Latham	E30KR2	RR2Y	3.0	R	IS-	63.1	34.8	18.4	12.2	6	322	49.9	67.9	59.0	76.7
Pioneer	P275R2 \$	RR	2.7	R	EE.G	63.1	33.7	19.8	12.1	6	322	55.8	61.3	58.1	77.0
Prince Brand	PS-267R2	RR2Y	2.8	R	COB.H	62.9	33.4	19.2	12.2	4	320	55.6	61.1	62.4	76.0
Dyne-Cro	S23T107	RRK	3.2	R	ACI	62.7	33.1	18.1	12.3	2	319	56.7	61.5	59.0	80.8
Jacobson Seed	J84TR2	RRK	3.4	R	ACILPV	62.7	34.0	18.8	12.3	2	319	56.6	60.0	63.4	75.1
Dyne-Cro	S23R128	RR2Y	3.0	R	COB	62.6	34.3	18.2	12.2	3	318	56.6	57.6	58.5	78.8
Hefly	H2187	RRK	3.1	NR	DST	62.6	33.9	18.6	12.2	0	318	55.3	60.1	63.8	71.3
Stone	S28F12 \$	RR2Y	3.2	R	SFI	62.6	33.7	18.6	12.1	3	317	56.9	60.0	64.7	68.2
Hefly	H2607	RRK	2.6	NR	DST	62.4	33.6	18.7	12.0	8	316	55.2	56.7	61.8	76.0

Averages: 63.8 34.2 18.8 12.2 19 347 54.2 61.2 63.6 74.2

LSO (0.10) = 3.7 0.9 0.7 Ha 13 3.2 4.4 2.9 4.2

LSO (0.20) = 2.6 0.6 0.5 Ha 6 2.2 3.0 2.0 2.9

Previous years average yield for region, 12.8 bu/acre, 4 yrs

Field & Issue Factors: Seed Moisture = 73.0% Work = 1.3 Drags = 91.000 Price = \$4.75 (GAC) \$4.76 (non-GAC)

1 Use test page for additional information. Dark shaded row identifies the check product found in early, and all season trials. Bold results are significantly above test average by LSO (0.10). ns = not significantly different; \$ = 2 sig.

Additional reports available at www.FIRSTsoybean.com ©2016 All rights reserved by Agreement: Stein Consulting, Inc.

Report Date: 8/24/2016 Revised: 11/16/2016 Proven and of context results added

Relative Maturity (RM) and Yield

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

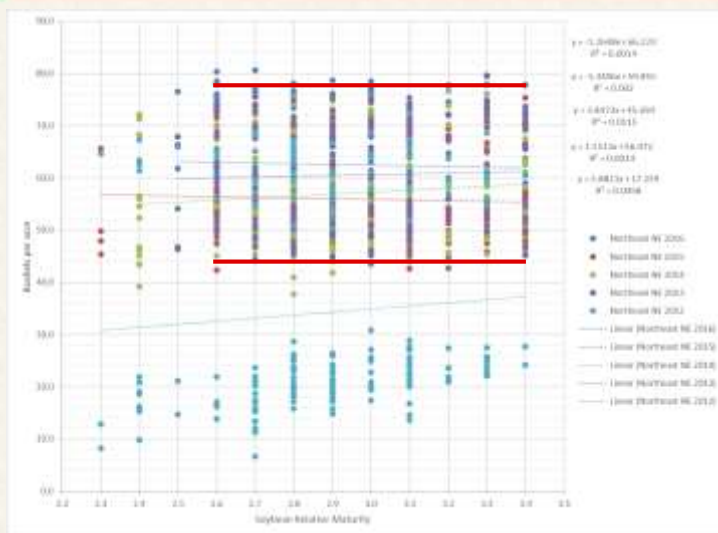
RM	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.4
# of varieties	1	6	1	2	2	2	2	1
Yield (bu/ac)	64.7	64.5	65.7	64.5	64.7	65.4	64.5	63.6

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

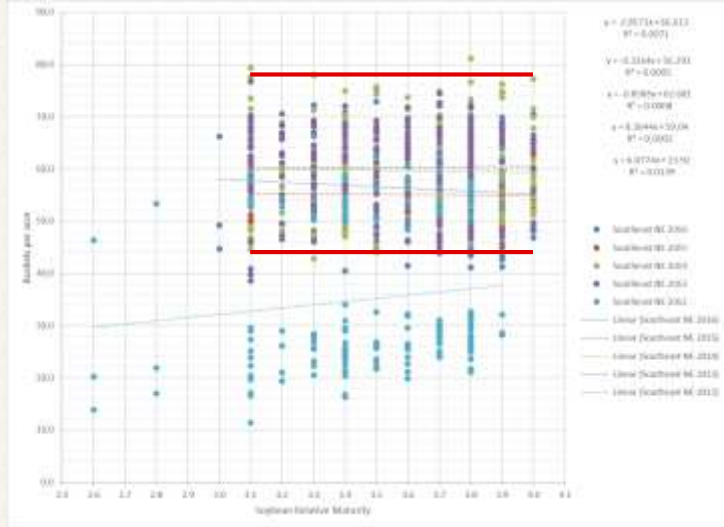
RM	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
# of varieties	1	1	1	5	2	1	3	3	3	1
Yield (bu/ac)	61.0	58.2	57.0	58.9	58.6	56.8	56.6	57.4	57.0	56.0



FIRST Seeds Test (2012-2016) Northeast Nebraska



FIRST Seeds Test (2012-2016) Southeast Nebraska



Planting Date



Planting Date and Maturity



Average response of 14 varieties — 3.0 to 3.9 MG
 Source: <http://cropwatch.unl.edu/why-soybean-planting-date-matters>



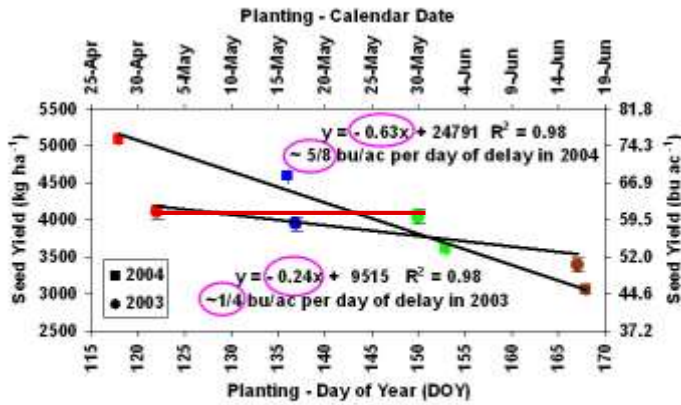
Planting Date and Maturity

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	Sept 21
May 17	24	148	Oct 12	May 16	23	136	Sept 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

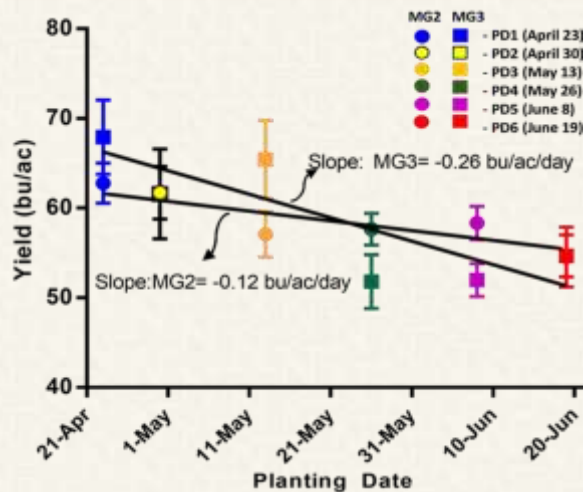


The red, blue, green, and brown vertical lines denote four planting dates in 2003 and 2004 of: (1) late April - early May, (2) mid-May, (3) late May - early June, and (4) mid-June, respectively.

Source: <http://cropwatch.unl.edu/cropwatch-april-16-2010-three-reasons-why-soybean-planting-date-matters>

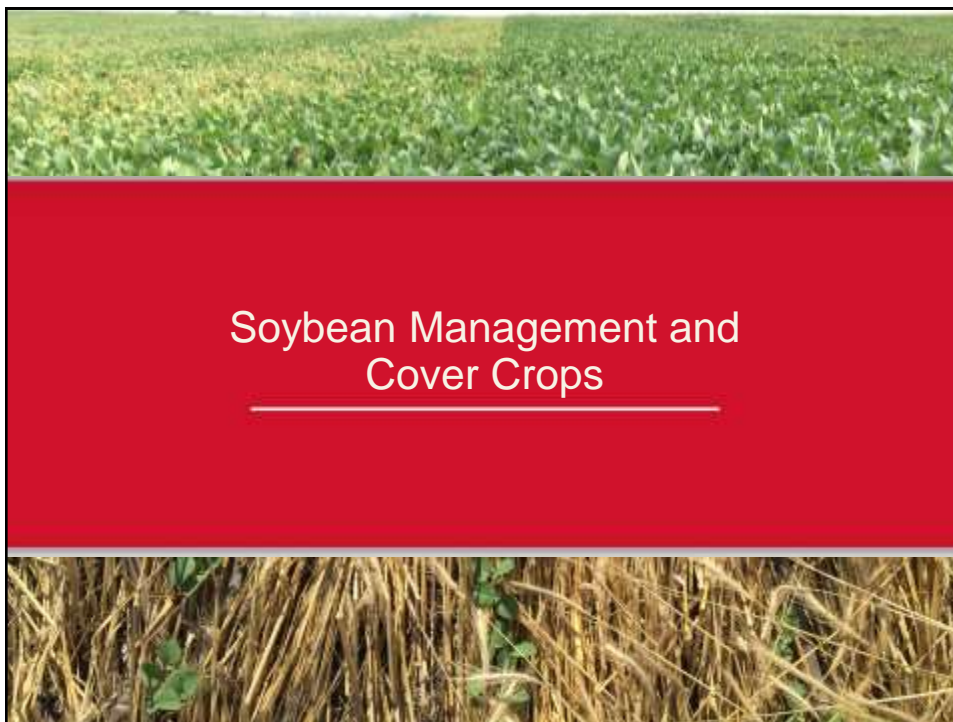


Planting Date and Yield - 2015



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!

