Soybean Variety Selection-A soybean in no longer a soybean.

. . . . . .

Dennis Lange

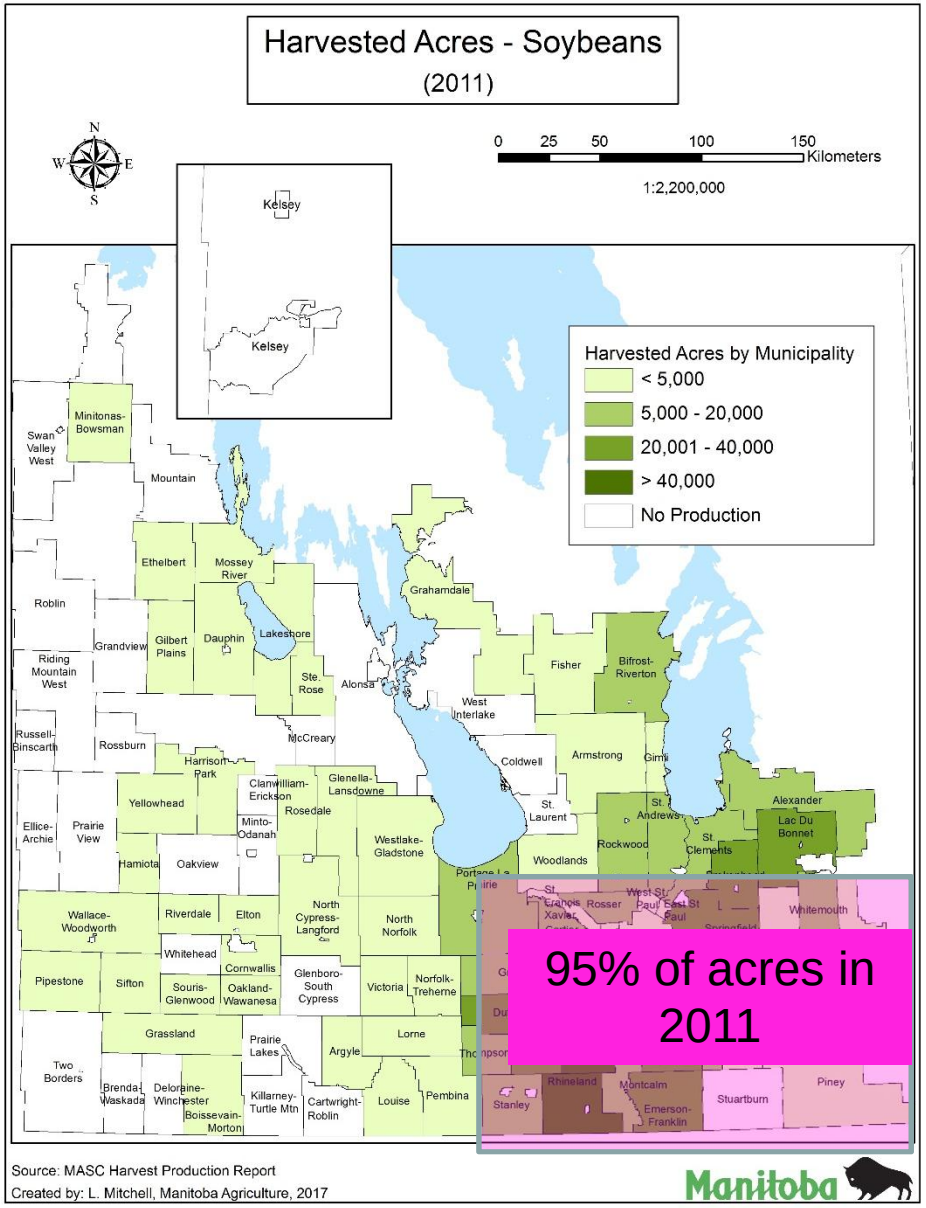
Industry Development Specialist-Pulses

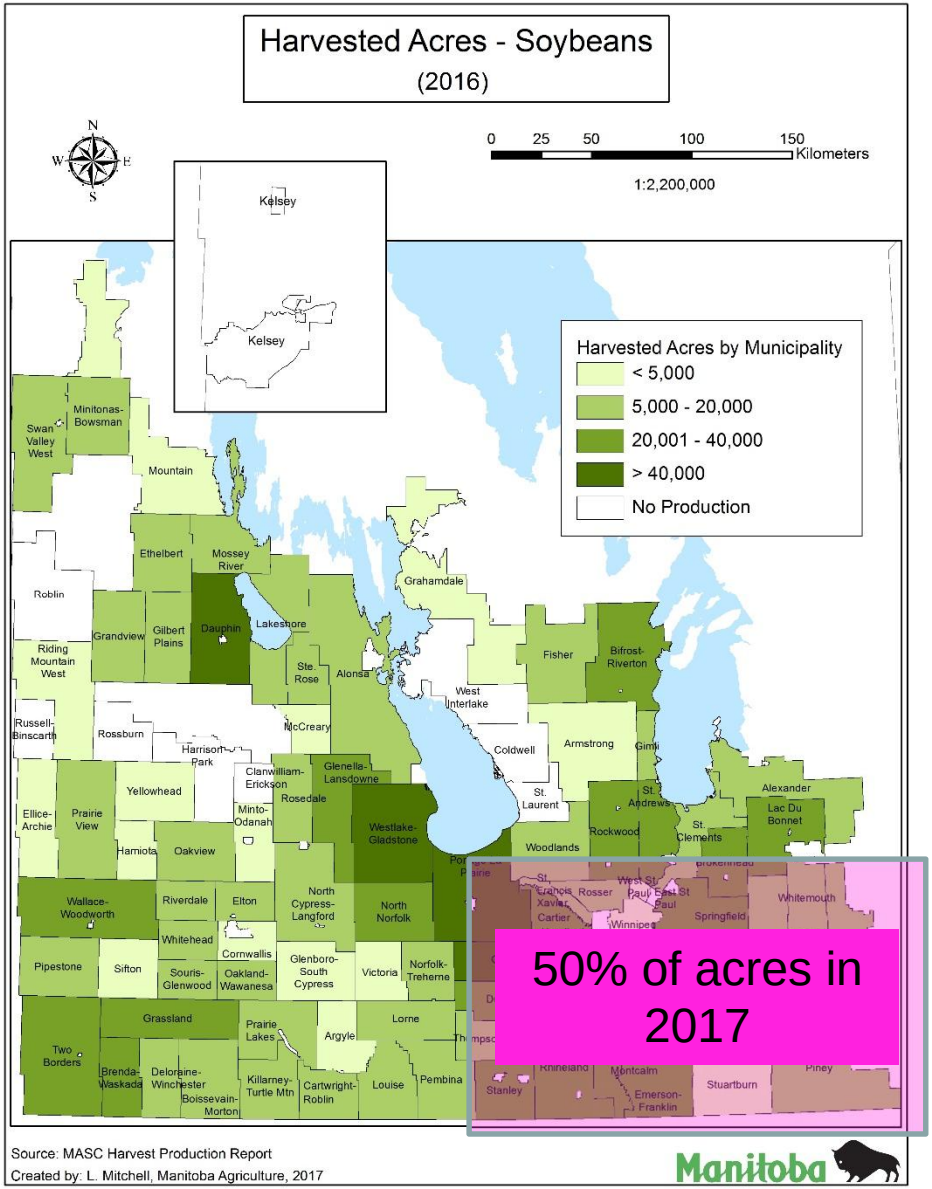
Manitoba

Topic's for Today

- Growth of Manitoba Acres/SK -success
  - (Yield/ Moisture)
- Yield data (Varietal Difference????)
- Other Factors :
  - IDC-Challenges
  - Extend Soybeans
  - Seed Quality (Potential Dry Seed Issues in 2018)-challenges
  - Seed treatment and Soybean Aphids

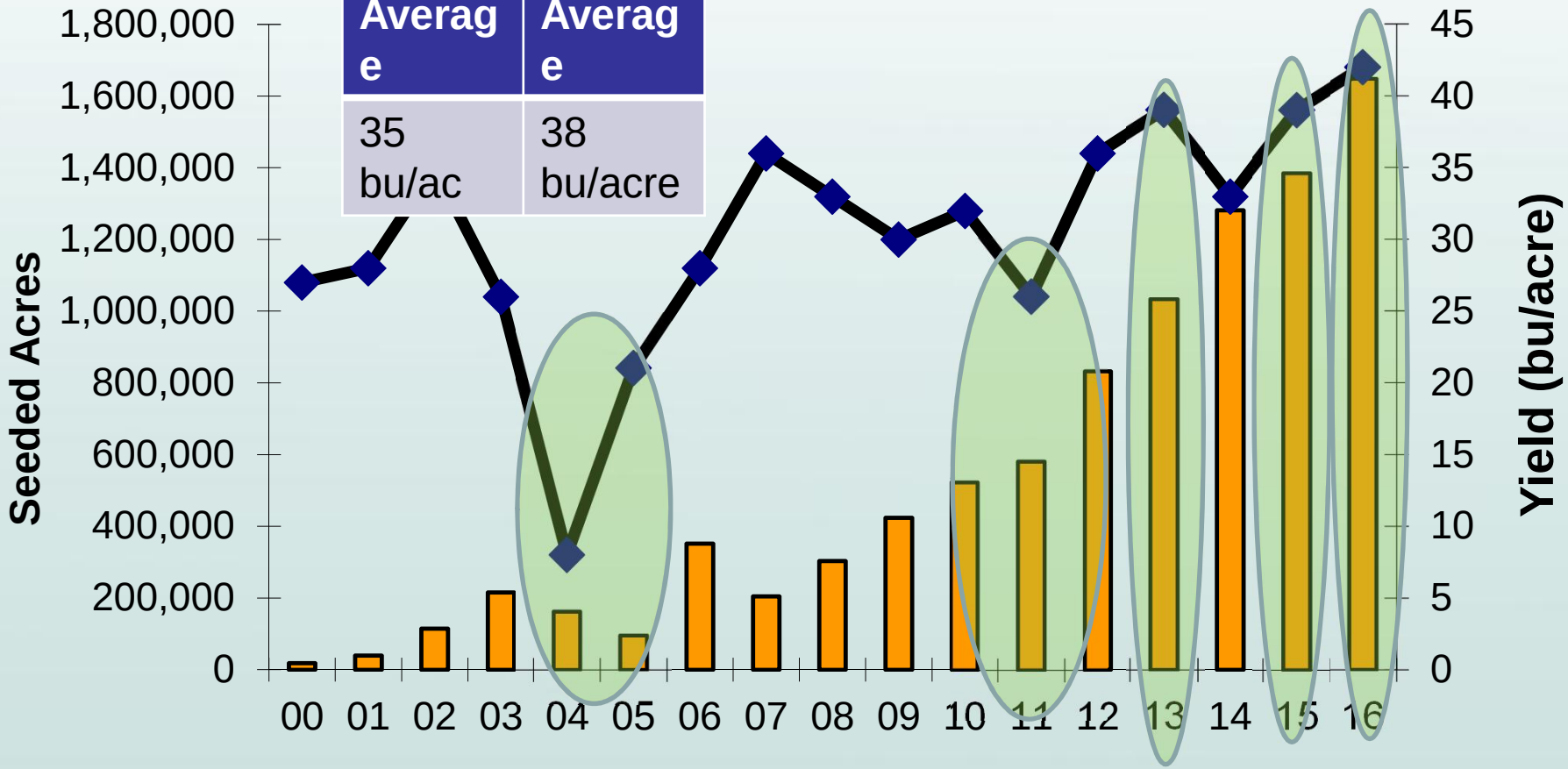
MB Acre Expansion





Manitoba Historic Soybean production

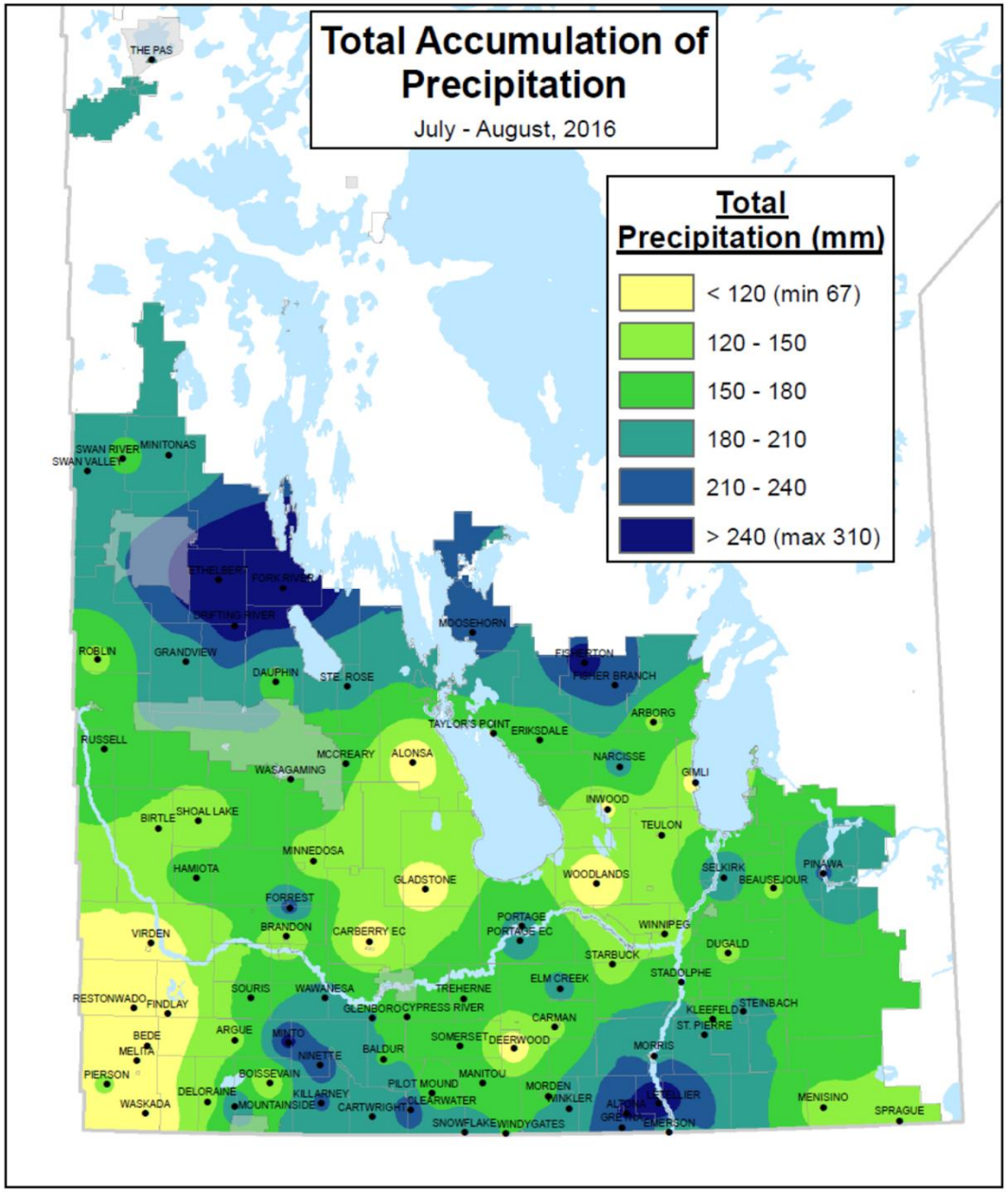
10 year Average	5 year Average
35 bu/ac	38 bu/acre



Manitoba
Soybean Yield and acres 2000-2016

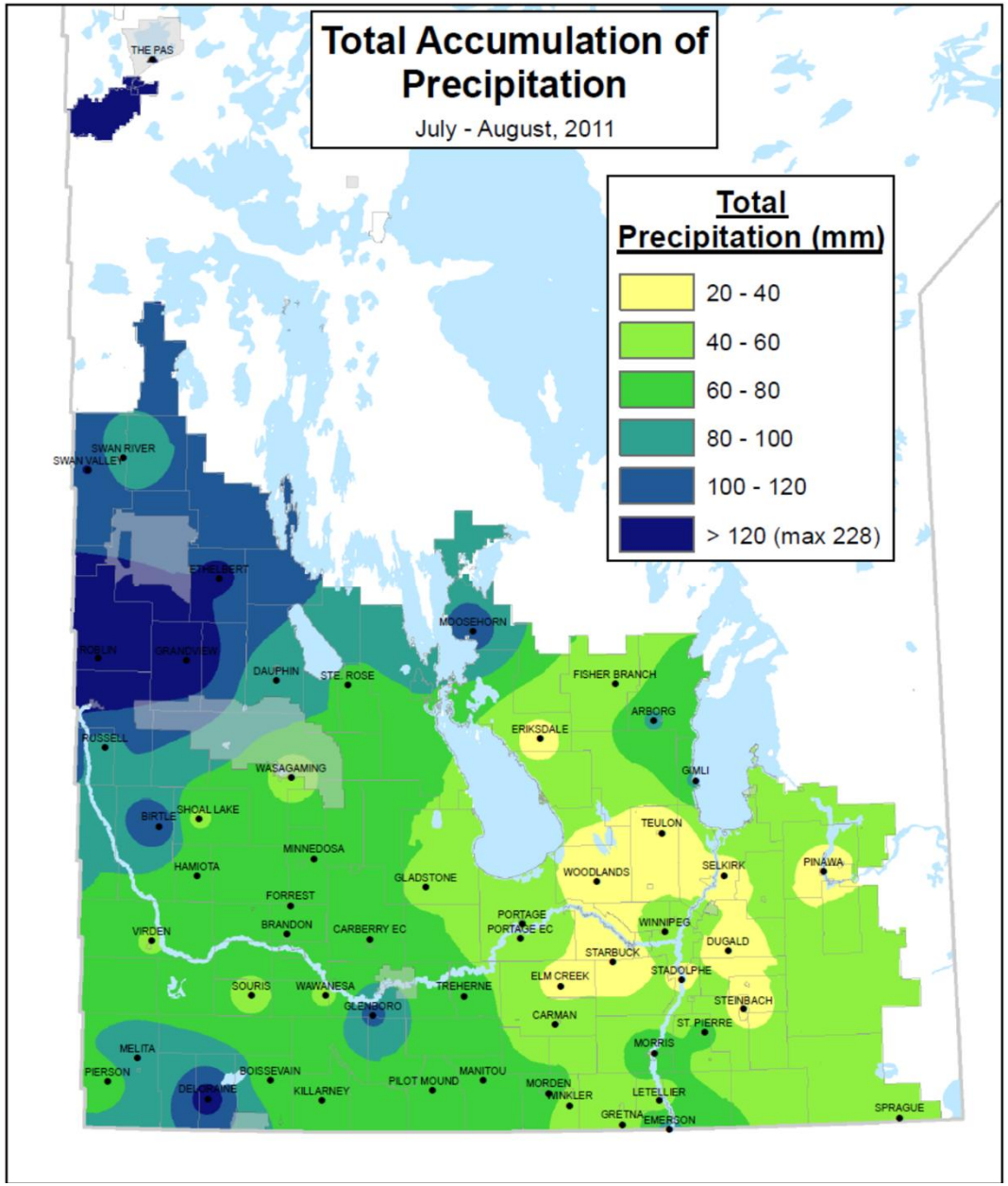
Source: MASC "Harvest Production Report"
Marketshare 2016 Yield Estimated

Manitoba



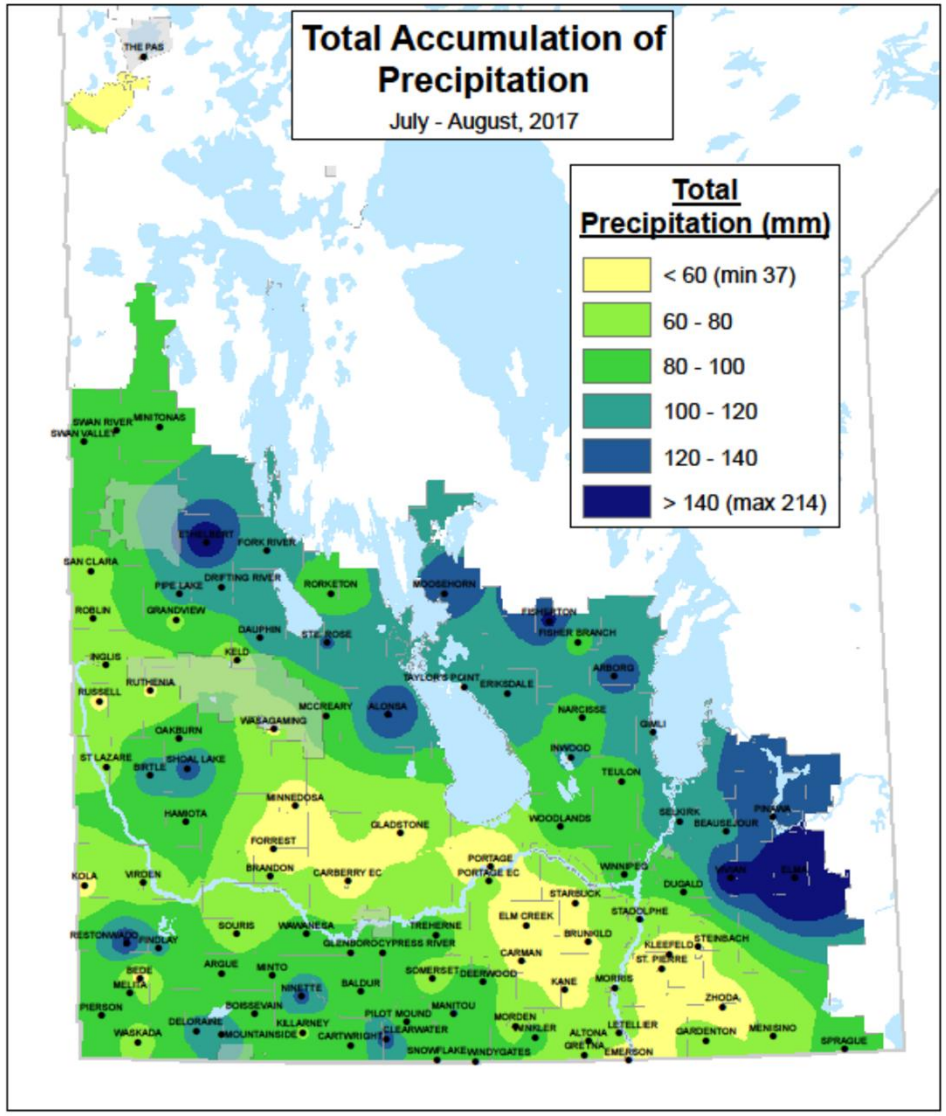
2016 MB Yield 42 bu/ac

Manitoba



2011 MB Yield 26 bu/ac

Manitoba



Canada

Growing Forward 2

Manitoba

2017 MB Estimated Yield 34 bu/ac

Soybeans Marketshare-2017

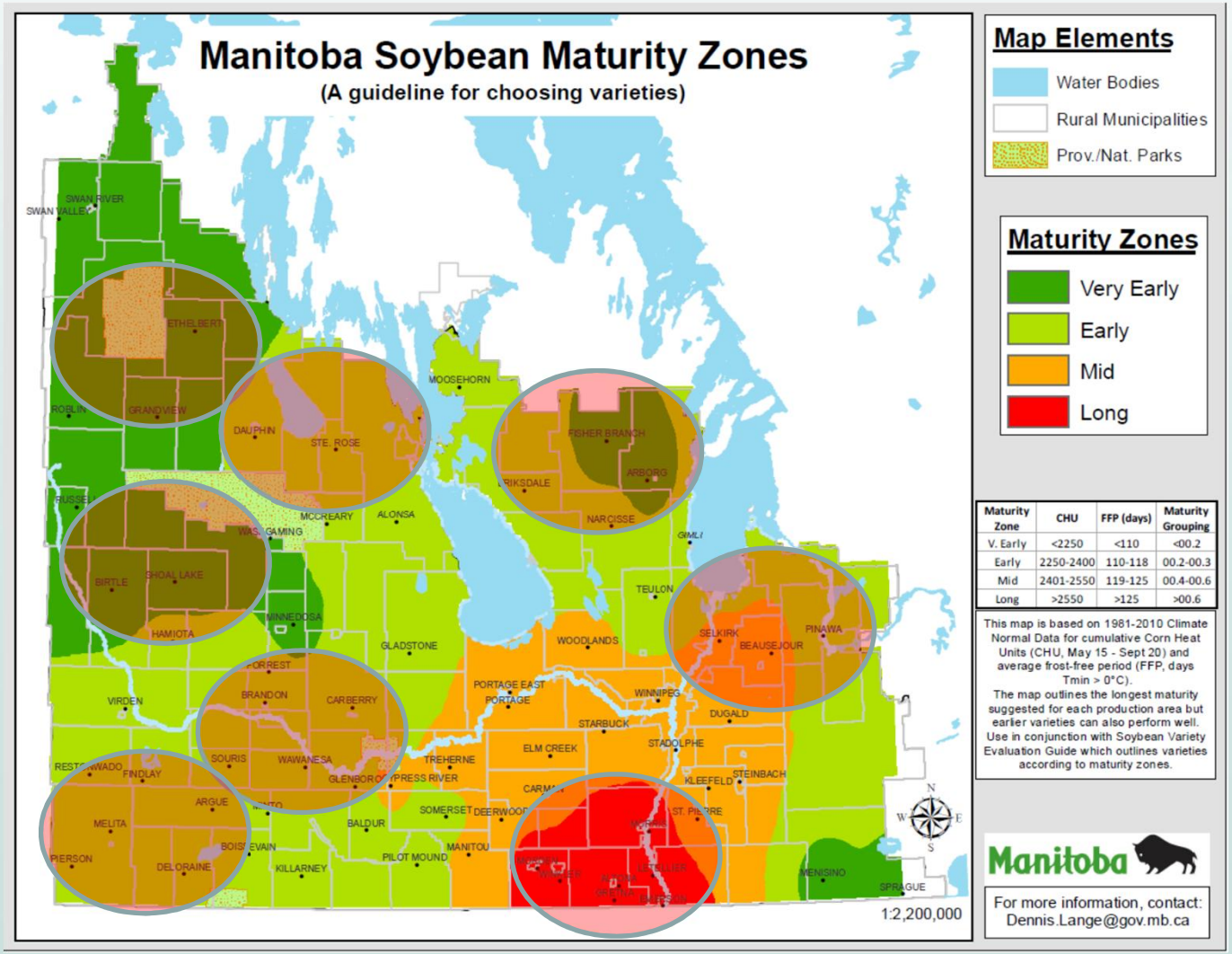
BEANS SOYBEANS - 2017 MANITOBA VARIETY ACREAGE REPORT

S007-Y4 RR2Y	8.3%
23-60RY	6.1%
AKRAS R2	5.4%
P006T46R	5.4%
24-10RY	4.4%
24-12RY	3.5%
S0009-M2	3.3%
25-10RY	3.2%
NSC WATSON RR2Y	3.2%
LS 003R24N	3.0%

Based on 2,150,632 Acres Reported

There is roughly 3% marketshare of all xtend lines in 2017 of all soybean lines

Step One Variety Selection



Long term Data

EASTERN MANITOBA ROUNDUP READY SOYBEAN

Variety Descriptions

Manitoba Variety Zone	Company Maturity Grouping	Variety	Type[1]	Relative Days to Maturity[2] + / - of Check Average	2017	2016	2015	Yield % Check	Site Years Tested	Hilum Colour	IDC[3] Rating (1-5)	IDC[3] Grouping	Resistance to: SCN[4]	Resistance to: PRR[5]
	000.6	NSC LEROY RR2	R2Y	-13	—	-13	—	78	5	Y	2.2	ST	—	—
Very	000.9	22-60RY	R2Y	-10	—	-10	-9	90	18	BL	2.1	ST	—	1c
Early	000.9	S000-M2	R2Y	-8	-8	-9	-8	89	17	IY	2.2	ST	—	Rps6
Zone	000.9	PS 00095 R2	R2Y	-8	-6	-9	—	87	10	BL	1.7	T	—	—
	000.8	Nocoma R2®	R2Y	-7	-7	—	—	93	6	B	2.2	ST	—	—
	000.8	NSC Watson RR2Y	R2Y	-7	-5	-8	-8	88	17	IY	2.1	ST	—	—
	00.1	NSC RESTON RR2Y	R2Y	-6	—	-7	-5	92	28	BL	2.6	S	—	1k
	00.1	S001-B1	R2Y	-6	—	-6	—	93	5	Y	1.9	ST	—	—
	00.1	Motus R2	R2Y	-6	—	-7	-5	95	18	BL	1.7	T	—	1c
	00.3	McLeod R2	R2Y	-5	—	-5	-5	95	28	BL	1.8	ST	—	—
	00.9	S0009-D6	R2Y	-5	-5	—	—	94	6	IY	2.4	S	—	1k
	00.2	Bishop R2	R2Y	-5	—	-4	-6	91	30	IY	2.3	S	—	—
	00.3	NSC Austin RR2Y	R2Y	-5	—	-4	-5	93	9	Y	2.2	ST	—	—
	00.9	LS TRI9R2Y	R2Y	-4	-4	—	—	94	6	IY	2.5	S	—	—
	00.2	P002A63R®	RR1	-4	-4	—	—	89	6	Y	2.0	ST	—	1c
	00.1	PV 11S001 RR2	R2Y	-4	-4	—	—	94	6	Y	1.8	ST	—	—
Early	00.7	LS TRI7XT	R2X	-4	-4	—	—	89	6	GI	2.3	S	—	—
Season	00.5	S007-Y4	R1Y	-4	-2	-5	-5	106	30	IY	2.0	ST	—	1c
Zone	00.2	23-60RY	R1Y	-4	-3	-4	-4	102	30	BL	1.7	T	Yes	—
	00.3	S003-L3	R2Y	-4	-2	-4	-5	95	17	BR	2.2	ST	Yes	1c,1k
	00.2	LS 002R24N	R2Y	-4	—	-4	-3	103	24	BL	2.0	ST	Yes	—
	00.3	PS 0035 NR2	R2Y	-3	—	-3	-4	100	24	BL	1.9	ST	Yes	—
	000	Torro R2	R2Y	-3	-2	-5	—	91	17	BL	2.2	ST	—	1c
	00.6	P006T46R®	RR1	-3	-3	-4	—	91	11	BR	2.0	ST	—	1c
	00.5	Lono R2®	R2Y	-3	—	-3	-3	105	24	Y	2.0	ST	—	1k
	00.4	PS 0055 R2	R2Y	-3	—	-2	-5	91	15	IY	1.8	ST	—	1k
	00.3	Mahony R2	R2Y	-3	0	-5	-5	100	24	BL	2.9	S	—	—
	00.8	Barron R2X	R2X	-3	-3	—	—	91	6	BR	2.5	S	—	—
	00.5	S006-W5	R2Y	-3	-2	-3	-3	113	14	IY	2.5	S	—	1c,1k
	00.8	TH 87000 R2YX	R2X	—	—	—	—	nt	nt	IY	2.1	ST	—	—
	00.9	NSC StarCity RRX2	R2X	—	—	—	—	nt	nt	BR	2.2	ST	—	—
	00.8	DKB0008-39	R2X	—	—	—	—	nt	nt	GR	2.2	ST	—	—
	000	P000A87R®	RR1	—	—	—	—	nt	nt	TN	1.7	T	—	1k
	00.3	Akras R2	R1Y	-2	1	-4	-4	104	35	BL	1.7	T	—	1k
	00.5	Foote R2	R1Y	-2	0	-4	—	99	11	IY	1.8	ST	—	1c
	00.3	Kosmo R2	R1Y	-2	—	-2	—	94	5	Y	1.9	ST	—	—
	000	DARIO R2X	R2X	-2	-2	—	—	98	6	BR	2.8	S	—	—
	00.9	NSC Gladstone RR2Y	R2Y	-2	1	-3	-3	100	30	BL	2.1	ST	—	1c
	00.5	24-10RY	R2Y	-2	0	-3	-2	102	44	BL	1.9	ST	—	1c
	00.3	LS 003R24N	R2Y	-2	—	-1	-2	102	21	BL	1.9	ST	Yes	1c
	00.2	MANI R2X	R2X	-1	-1	—	—	104	6	BL	1.8	ST	Yes	1c
	00.3	DKB003-29	R2X	-1	-1	—	—	103	6	BL	1.7	T	—	—
Mid	00.2	LS SOLAIRE	R2Y	-1	1	-3	—	93	11	BL	2.4	S	—	1c,1k
Season	00.7	P007A90R®	RR1	-1	-1	—	—	101	5	BL	1.9	ST	Yes	1c
Zone	00.5	Gray R2	R2Y	0	0	0	-1	100	33	BL	1.9	ST	—	1c
	00.4	LS 004XT	R2X	0	0	—	—	98	5	BL	1.9	ST	—	1c
	00.6	24-12RY	R2Y	0	1	-1	—	100	10	BL	2.0	ST	—	—
	00.4	PS 0044 XRN	R2X	0	0	—	—	101	6	BL	2.0	ST	Yes	1a,1k
	00.3	TH 33003R2Y	R2Y	0	0	0	0	100	44	BR	2.0	ST	—	1c
	00.7	NSC Richer RR2Y	R2Y	0	—	1	0	104	24	BL	1.6	T	—	1c
	00.8	P008T22R®	R2Y	0	2	0	-1	103	29	BL	1.6	T	—	1c
	00.5	TAMULA R2	R2Y	1	1	0	—	100	11	Y	2.3	S	—	—
	00.4	TH 37004 R2Y	R2Y	1	1	—	—	99	11	BL	2.0	ST	Yes	1c
	00.3	TH 87003 [illegible]	R2X	1	1	—	—	108	6	BL	1.7	T	—	—

(continued) **EASTERN ROUND UP READY SOYBEANS**

Manitoba Variety Zone	Company Maturity Grouping	Variety	Type[1]	Relative Days to Maturity[2] + / - of Check Average	2017	2016	2015	Yield % Check	Site Years Tested	Hilum Colour	IDC[3] Rating (1-5)	IDC[3] Grouping	Resistance to: SCN[4]	Resistance to: PRR[5]
	00.6	DUGALDO R2X	R2X	1	1	—	—	98	5	IY	2.3	S	—	—
	00.4	DYLANO R2X	R2X	1	1	—	—	90	6	GR	2.3	S	—	—
	00.7	NSC Riverside RR2X	R2X	1	1	—	—	98	5	BL	2.1	ST	—	—
	00.6	HS 006RYS24	R2Y	1	2	1	0	100	39	BL	1.7	T	—	—
	00.2	MARDUK R2X	R2X	1	1	—	—	101	6	Y	2.0	ST	—	1c
	00.3	NSC Newton RR2X	R2X	1	1	—	—	102	6	BR	2.1	ST	—	—
	00.8	Currie R2	R2Y	2	—	2	1	103	24	BL	1.8	ST	—	1k
Mid	00.5	LS Eclipse	R2Y	2	—	2	1	108	8	BL	2.2	ST	Yes	1c
Season	00.5	NSC Starbuck RRX2	R2X	2	2	—	—	102	6	BL	2.0	ST	—	—
Zone	00.6	DS0067Z1	R2Y	2	3	1	—	102	11	BL	1.7	T	—	—
	00.7	TH 88007R2X	R2X	2	2	—	—	106	6	BL	2.2	ST	—	1c
	00.6	DKB006-29	R2X	2	2	—	—	103	5	BL	1.6	T	—	—
	00.5	BARKER R2X	R2X	2	2	—	—	104	5	BL	1.8	ST	Yes	1k
	00.5	TH 88005R2XN	R2X	2	2	—	—	100	6	BL	1.8	ST	Yes	1c
	00.7	PV 12S007 R2X	R2X	2	2	—	—	104	5	BL	2.0	ST	—	—
	00.5	DKB005-52	R2X	2	2	—	—	108	5	BL	2.0	ST	—	—
	00.5	PRO 2525R2	R2Y	2	5	1	1	107	22	BL	1.7	T	—	—
		Experimental lines that are being tested / proposed for registration in Canada												
	00.7	EXP00717 XRN	R2X	2	2	—	—	103	5	BL	1.9	ST	Yes	1k
	00.8	S008-N2	R2Y	3	3	2	—	105	9	IY	1.8	ST	—	—
	00.6	LS 006XT	R2X	3	3	—	—	100	5	BL	1.7	T	—	—
	00.8	DOMINGO R2X	R2X	3	3	—	—	97	5	IY	2.0	ST	—	—
	00.6	0066 XR	R2X	3	3	—		101	5	IY	2.4	S	—	—
Long	00.8	TH 88008 R2X	R2X	3	3	—	—	103	6	BL	1.8	ST	—	1k
Season	00.7	PS 0074 R2	R2Y	3	5	3	1	107	24	BR	1.7	ST	—	—
Zone	00.5	LS MISTRAL	R2Y	3	5	2	—	112	10	BL	1.7	T	—	—
	00.9	NSC JORDAN RR2Y	R2Y	3	—	3	—	106	4	BL	2.2	ST	—	—
	0.1	HYDRA R2	R2Y	3	—	4	1	104	12	BL	2.1	ST	—	1k
	00.5	PV 10S005 RR2	R2Y	4	4	—	—	106	5	BL	1.9	ST	—	—
	00.7	RX00797	R2Y	4	4	—	—	104	5	BL	1.6	T	Yes	1c
	00.8	DKB008-81	R2X	4	4	—	—	101	5	GR	1.9	ST	—	—
	0.2	LEMPO R2X	R2X	7	7	—	—	101	5	GR	2.1	ST	—	—
CHECK CHARACTERISTICS														
TH 33003R2Y				118	117	121	115	51 bu/acre		44 site years				

* nt indicates not tested in 2017

1 R2X Indicates xtend Technolgy

2 Maturity Ratings for 2017 are average across Carman, Morris, Portage, St. Adolphe

3 Iron Deficiency Chlorosis (IDC) Groupings; T–Tolerant, ST–Semi-Torerant, S–Suceptible

4 SCN -Soybean Cyst Nematode Resitance

5 PRR Phytophthora Root Rot

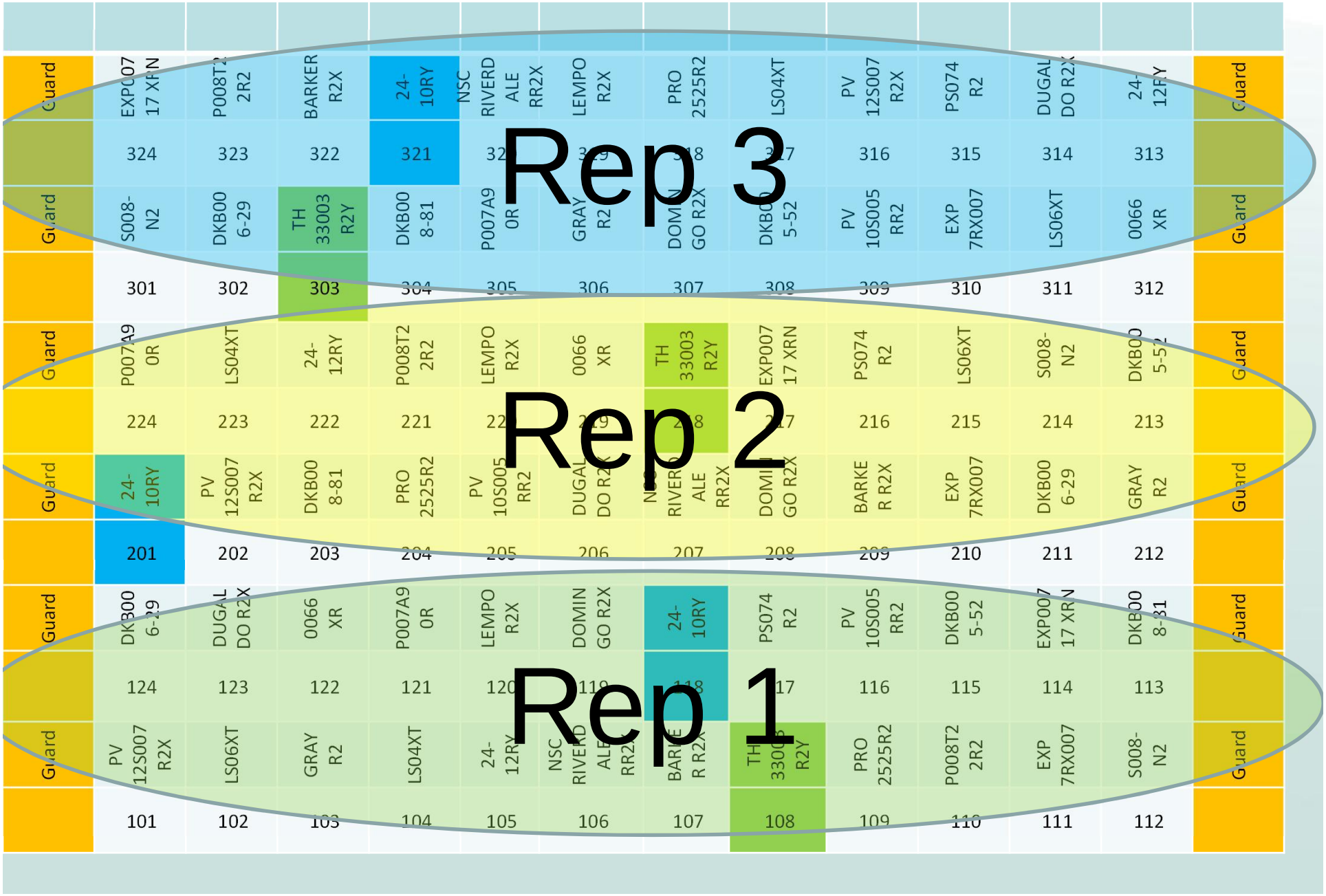
What is the similarities & differences between the Eastern and Western MB trials

- Location & Varieties: Western (Early-Mid Season) vs Eastern (all maturity groups tested)
- Eastern: registered and experimental lines
- Western: Only lines that will be marketed the following year
- Both trials are randomized and replicated

Manitoba Soybean Varieties

- 2017 -62 Roundup Ready and X-tend lines being tested in eastern MB trials
- 2017- 22 Conventional Lines tested in Eastern MB
- 2017 -50 lines RR and X-tend lines tested in Western MB Trials
- 2017 – 8 Conventional Lines in Western MB

Rosebank RR Lines, 2017 -24 lines



What do we test so many locations?

- # 1 we want to see how the varieties perform under various growing conditions
- Why are all the trials not listed in this years guide?
- Weather, Experimental error, Weeds, wildlife damage, etc.
- Sites are visited throughout the year, data is analysed in the fall and if site fails its not published.

EASTERN ROUND UP READY SOYBEANS *(continued)*

Yield Comparison

Manitoba Variety Zone	Variety	2017 Yield: % TH 33003R2Y						
		Early Sites		Core Sites				Late Sites
		Beausejour	Stonewall	Carman	Morris	Portage	St. Adolphe	Rosebank
	LS SOLAIRE	97	92	96	104	101	99	—
	P007A90R®	—	—	100	101	118	102	89
	Gray R2	—	—	106	88	109	86	94
	LS 004XT	—	—	102	92	108	91	95
	24-12RY	—	—	104	108	103	83	105
	PS 0044 XRN	116	83	105	98	100	94	—
	TH 33003R2Y	100	100	100	100	100	100	100
Mid Season Zone	P008T22R2®	—	—	101	104	96	95	96
	TAMULA R2	88	103	105	101	113	115	—
	TH 37004 R2Y	125	83	100	102	104	88	—
	TH 87003 R2X	119	105	107	113	101	97	—
	DUGALDO R2X	—	—	97	99	105	99	94
	DYLAND R2X	88	83	96	89	95	77	—
	NSC Riverside RR2X	—	—	99	87	95	104	105
	HS 006RYS24	114	92	103	105	105	100	—
	MARDUK R2X	116	97	102	99	91	98	—
	NSC Newton RR2X	120	99	95	94	102	102	—
	NSC Starbuck RRX2	126	88	95	105	100	97	—
	DS0067Z1	101	86	92	96	113	90	—
	TH 88007R2X	116	101	106	104	105	102	—
	DKB006-29	—	—	110	111	97	100	95
	BARKER R2X	—	—	106	106	109	98	101
	TH 88005R2XN	101	86	91	112	111	103	—
	PV 12S007 R2X	—	—	109	105	106	96	100
	DKB005-52	—	—	111	115	113	92	106
	PRO 2525R2	—	—	106	97	109	100	100
Check Characteristics	TH 33003R2Y (bu/ac)	50	30	55	47	44	33	60
	CV%	13	5	5	8	8	5	5
	LSD%	24	8	9	12	13	8	9
	Sign Diff	Yes	Yes	Yes	Yes	Yes	Yes	Yes

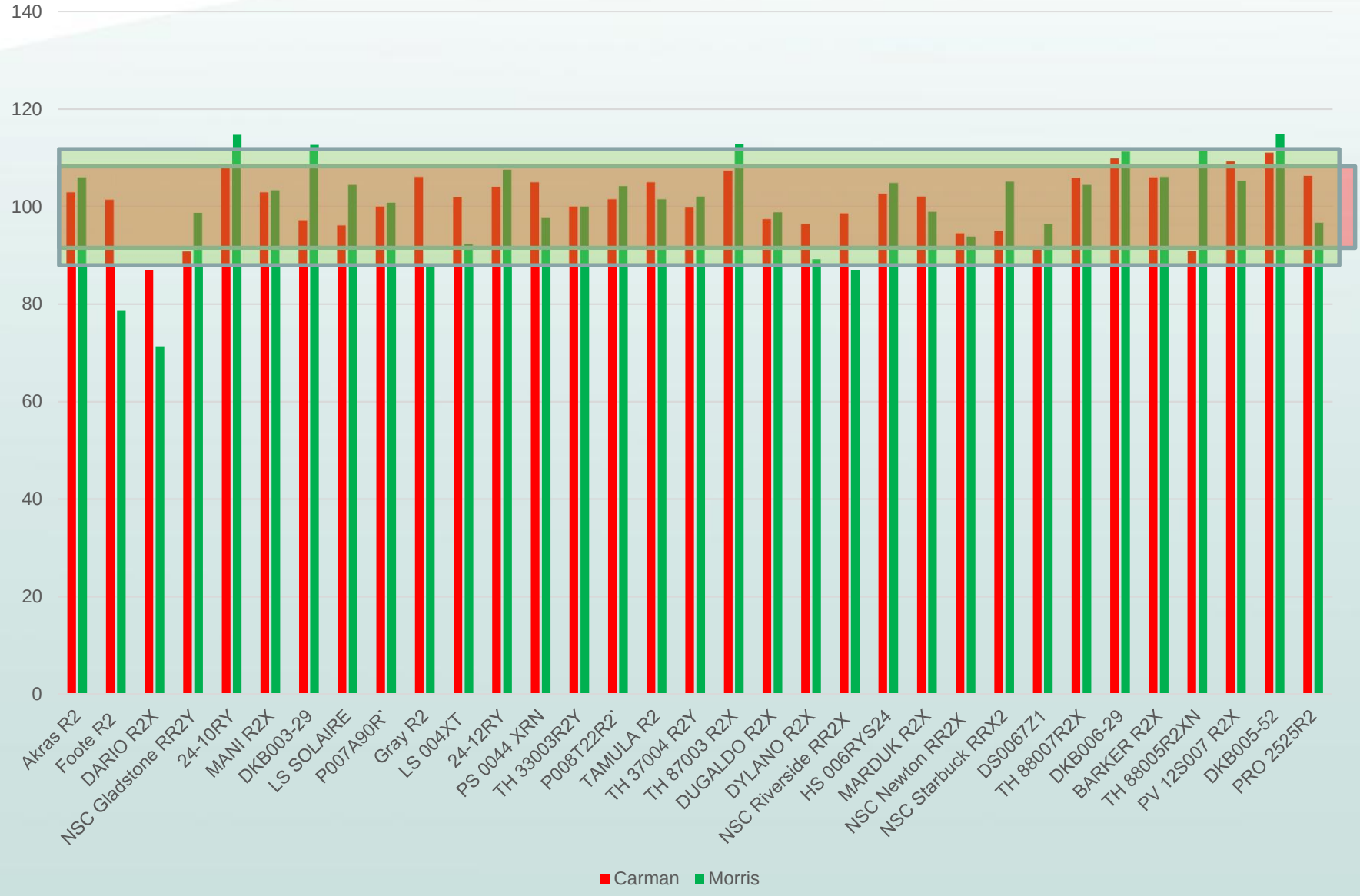
% of TH33003R2Y

Carman LSD 9%
Range above and below 100%

Morris LSD 12%
Range above and below 100%

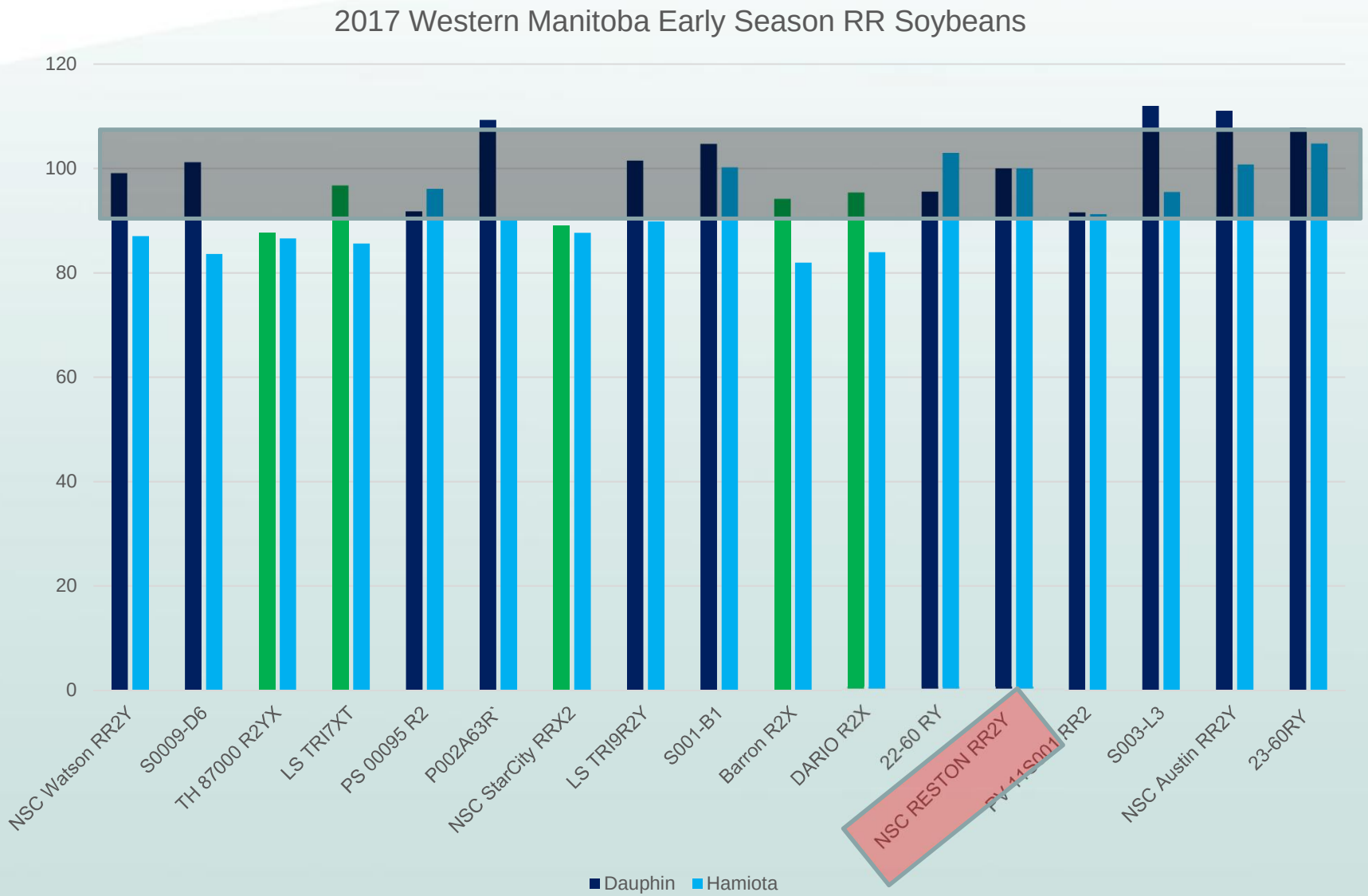
Manitoba

Mid Season Lines RR Soybeans-Eastern Manitoba



% of NSC Reston

Dauphin and Hamiota LSD 9% Range above and below 100%



Western Data

WESTERN MANITOBA SOYBEAN

Comments:

The Western Manitoba Soybean variety trial data was donated by the Manitoba Pulse & Soybean Growers

Variety Descriptions

Manitoba Variety Zone	Company Variety	Yield Maturity Grouping	Site % Check	Years Tested	Relative Days to Maturity +/- Check Average	2017	2016	2015	2017 Yield % of NSC Reston RR2Y Boissevain	Carberry	Dauphin	Hamiota	Melita
Very	NSC LEROY RR2Y	000.6	83	10	-7	-8	-7	—	84	89	83	79	75
Early	P000A87R	000	81	5	-7	-7	—	—	82	85	86	73	83
Season	S0009-M2	000.9	100	15	-3	-4	-1	-5	101	100	103	88	96
Zone	Nocoma R2	000.8	98	5	-3	-3	—	—	109	100	100	92	85
	NSC Watson RR2Y	000.8	97	15	-2	-3	0	-4	97	97	99	87	87
	S0009-D6	000.9	90	5	-2	-2	—	—	82	92	101	84	91
	TH 87000 R2YX	000.8	85	5	-2	-2	—	—	80	89	88	87	79
	LS TRI7XT	000.7	90	5	-2	-2	—	—	92	89	97	86	86
	PS 00095 R2	000.9	94	10	-1	-3	0	—	96	98	92	96	99
	P002A63R	00.2	102	5	-1	-1	—	—	104	105	109	90	100
	NSC StarCity RRX2	000.9	91	5	-1	-1	—	—	85	106	89	88	85
	LS TRI9R2Y	000.9	94	5	-1	-1	—	—	97	89	101	90	90
	S001-B1	00.1	101	10	-1	-1	-1	—	92	101	105	100	93
	Barron R2X	000.8	91	5	-1	-1	—	—	96	93	94	82	90
	DARIO R2X	000.8	88	5	-1	-1	—	—	84	88	95	84	90
	22-60 RY	000.9	97	19	0	1	-1	-1	101	104	96	103	100
	NSC RESTON RR2Y	00.1	100	25	0	0	0	0	100	100	100	100	100
	PV 11S001 RR2	00.1	91	5	1	1	—	—	94	96	92	91	81
Early	S003-L3	00.3	104	10	2	0	4	—	101	114	112	96	94
Season	NSC Austin RR2Y	00.3	100	10	2	2	2	—	97	102	111	101	88
Zone	23-60RY	00.2	10	21	2	0	4	2	110	116	108	105	89
	S006-W5	00.5	10	5	2	0	4	—	96	98	119	102	100
	Torro R2	00.1	99	5	2	2	—	—	97	103	111	96	84
	PS 0044 XRN	00.4	99	5	2	2	—	—	105	94	101	101	98
	DKB0008-39	000.8	10	5	2	2	—	—	104	99	96	88	90
	TH 87003 R2X	00.3	109	5	3	3	—	—	106	122	113	105	95
	McLeod R2	00.3	106	25	3	1	4	3	99	106	109	100	94
	PS 0055 R2	00.4	98	10	3	3	3	—	96	105	111	83	96
	Mahony R2	00.3	107	19	3	4	3	3	99	105	111	104	99
	DYLANO R2X	00.4	91	5	3	3	—	—	74	99	108	90	83
	LS 002R24N	00.2	106	24	4	2	6	3	101	113	111	104	93
	DKB003-29	00.3	98	5	4	4	—	—	100	100	105	94	89
	MARDUK R2X	00.2	101	5	4	4	—	—	99	108	108	93	93
	S007-Y4	00.5	109	19	4	3	6	3	99	95	108	106	97
	MANI R2X	00.2	103	5	4	4	—	—	92	106	116	103	94
	Foote R2	00.5	103	5	5	5	—	—	103	107	111	91	101
	P006T46R	00.6	109	10	5	4	6	—	102	111	121	107	100
	NSC Newton RR2X	00.3	89	5	5	5	—	—	88	93	97	83	78
	TH 33003R2Y	00.3	103	25	5	3	7	5	93	108	108	102	83
	PS 0035 NR2	00.3	103	24	5	3	7	5	94	126	115	101	89
Mid	LS MISTRAL	00.5	109	5	5	5	—	—	109	105	121	107	99
Season	Akras R2	00.3	107	19	5	6	4	5	94	116	108	104	114
Zone	Lono R2	00.5	109	19	5	4	7	5	108	112	108	105	104
	Kosmo R2	00.3	92	5	5	5	—	—	91	96	99	91	81
	TH 37004 R2Y	00.4	111	20	6	4	7	—	97	108	109	107	91
	PV 10S005 RR2	00.5	110	5	6	6	—	—	111	116	118	104	95
	DS0067Z1	00.6	99	5	7	7	—	—	92	103	111	94	95
	TH 88005R2XN	00.5	97	5	7	7	—	—	94	103	101	97	85
	LS SOLAIRE	00.2	105	10	7	5	9	—	110	111	121	94	99
	TAMULA R2	00.5	106	10	7	6	8	—	103	126	102	99	95
	CHECK CHARACTERISTICS	53	25	122	124	123	118	**NSC Reston RR2Y (bu/ac)**	62	59	66	64	43
	NSC Reston RR2Y	bu/ac	site years		days to maturity			CV%	8	7	6	6	4
								LSD%	13	12	9	9	6
								Sign Diff.	Yes	Yes	Yes	Yes	Yes
								Seeding Date	18-May	15-May	17-May	10-May	15-May
								Harvest Date	30-Sep	28-Sep	10-Oct	11-Oct	29-Sep

Maturity increasing

2017 Western Trials

Manitoba

Location Check Variety NSC Reston RR2Y	Total Entries	# of lines Higher yielding Than Check	# of lines Lower yielding than Check	# of Lines Extend lines higher yielding than Check	# of extend lines lower yielding than Check
Boissevain	50	0	7	0	4
Carberry	50	8	2	1	1
Dauphin	50	19	3	2	1
Hamiota	50	0	19	0	8
Melita	50	1	27	0	12

2017 Eastern MB Trial-Core Sites

Location Check Variety TH33003R2Y	Total Entries	# of lines Higher yielding Than Check	# of lines Lower yielding than Check	# of Lines Extend lines higher yielding than Check	# of extend lines lower yielding than Check
Carman	62	6	7	4	5
Morris	62	5	15	4	6
Portage	62	8	1	1	0
St. Adolphe	62	4	20	0	8

Long Term Data- Very Early Season Eastern Check TH33003R2Y

Manitoba				Yield	Site
Variety				%	Years
Zone	Variety	[1]Type	Relative days to maturity	Check	Tested
	22-60 RY	R2Y	-10	90	18
Very	S0009-M2	R2Y	-8	89	17
Early	NSC Watson RR2Y	R2Y	-7	88	17
Season	PS 00095 R2	R2Y	-8	87	10
Zone	Nocoma R2	R2Y	-7	93	6
	NSC LEROY RR2Y	R2Y	-13	78	5

Long Term Data-Early Season Eastern Check TH33003R2Y

Manitoba				Yield	Site
Variety				%	Years
Zone	Variety	[1]Type	Relative days to maturity	Check	Tested
	Bishop R2	R2Y	-5	91	30
	S007-Y4	R2Y	-4	105	30
	23-60RY	R2Y	-4	102	30
Early	NSC RESTON RR2Y	R2Y	-6	92	28
Season	McLeod R2	R2Y	-5	95	28
Zone	LS 002R24N	R2Y	-4	103	24
	PS 0035 NR2	R2Y	-3	100	24
	Lono R2	R2Y	-3	105	24
	Mahony R2	R2Y	-3	101	24
	Notus R2	R2Y	-6	95	18
	S003-L3	R2Y	-4	95	17
	Torro R2	R2Y	-3	94	17
	PS 0055 R2	R2Y	-3	97	15
	S006-W5	R2Y	-3	111	14
	LS TRI7XT	R2X	-4	88	6
	Barron R2X	R2X	-3	91	6
	S001-B1	R2Y	-6	93	5

Long Term Data-Mid Season Eastern Check TH33003R2Y				Yield	Site
				%	Years
	Variety	[1]Type	Relative days to maturity	Check	Tested
	24-10RY	R2Y	-2	102	44
	TH 33003R2Y	R2Y	0	100	44
	Akras R2	R2Y	-2	104	35
	P008T22R2`	R2Y	0	103	29
	NSC Richer RR2Y	R2Y	0	104	24
	Currie R2	R2Y	2	103	24
	PRO 2525R2	R2Y	2	107	22
Mid	LS 003R24N	R2Y	-2	102	21
	DS0067Z1	R2Y	2	102	11
Season	LS Eclipse	R2Y	2	108	8
	TH 87003 R2X	R2X	1	108	6
Zone	TH 88007R2X	R2X	2	106	6
	PV 12S007 R2X	R2X	2	104	5
	DKB006-29	R2X	2	103	5

Manitoba

https://www.masc.mb.ca/masc.nsf/mmpp_index.html

MASC - Management Plus

File Edit View Favorites Tools Help

http--proof.saskpulse.com... Citrix Online Province of Manitoba Ho... Manitoba Shortcuts

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MASC
Manitoba Agricultural Services Corporation

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Google™ Custom Search

Corporate Insurance Lending Other Programs

Manitoba Agricultural Services Corporation

Manitoba Management Plus Program (MMPP)

Table of Contents

Overview Yield Manitoba Regional Analysis Tools Management Information Thematic Crop Maps

Overview

MASC has worked hard over the years to develop many innovative and creative approaches to delivering quality products to its clients. The Manitoba Management Plus Program (MMPP) is one such example.

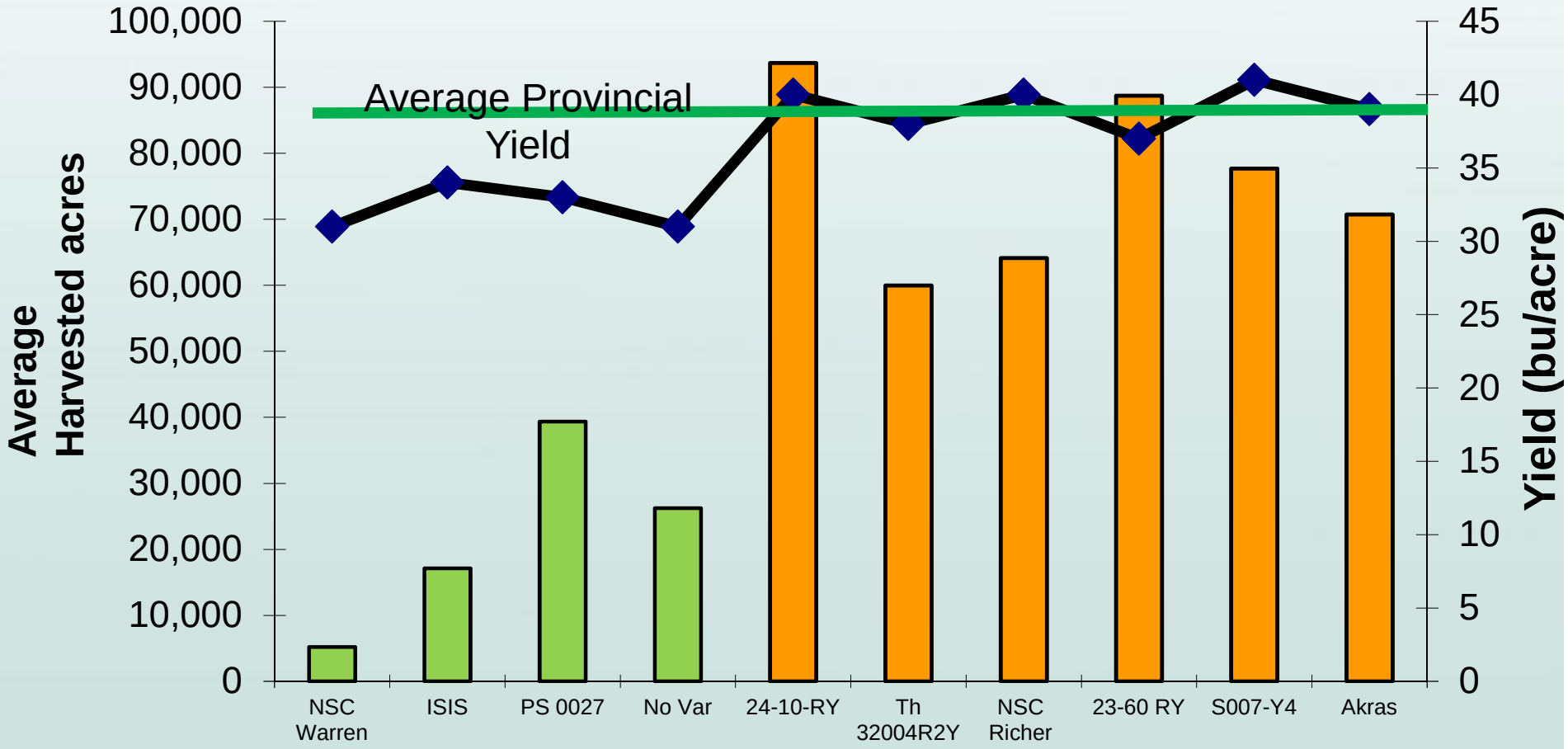
Over the years, producers have cooperated with MASC in completing comprehensive individual yield and management-related questionnaires. MMPP returns this data back to Manitoba producers in aggregated (anonymized) format to see trends, patterns and anomalies that help producers make better cropping decisions.

The Manitoba Management Plus Program has been on the Web since 1996, and makes available

100%

EN 2:09 PM 2017-12-28

2013-2017 Soybean Yield/Harvested acres



Soybean Lines: OFF Patent vs Most popular grown

Source: MASC: Variety analysis by Municipality Report


Southern ND
Richland County
Ingrid Kristjanson MAFRD

A soybean is no longer soybean

- Extend (Dicamba Tolerant)
- Liberty Link
- Conventional
- Roundup Ready
- Future 2-4D Tolerant

Roundup Ready Soybeans-Sprayed with Dicamba

Extend Soybeans 2017

- Pay close attention to droplet size, Large droplet size to reduce drift
- Watch wind speeds- Not less than 3 km/hr, or greater than 16 km/hr at boom height
- Triple rinse after spraying Dicamba tolerant Beans
- Know your surroundings- Avoid drift to non target crops
- Spray early in the growing season, Take advantage of residual control

Iron Deficiency Chlorosis (IDC)

- Interveinal leaf Yellowing
- Dark Green leaf veins
- Necrotic leaf tissue
- IDC symptoms usually begin as generalized yellowing but quickly change to interveinal yellowing

Manitoba

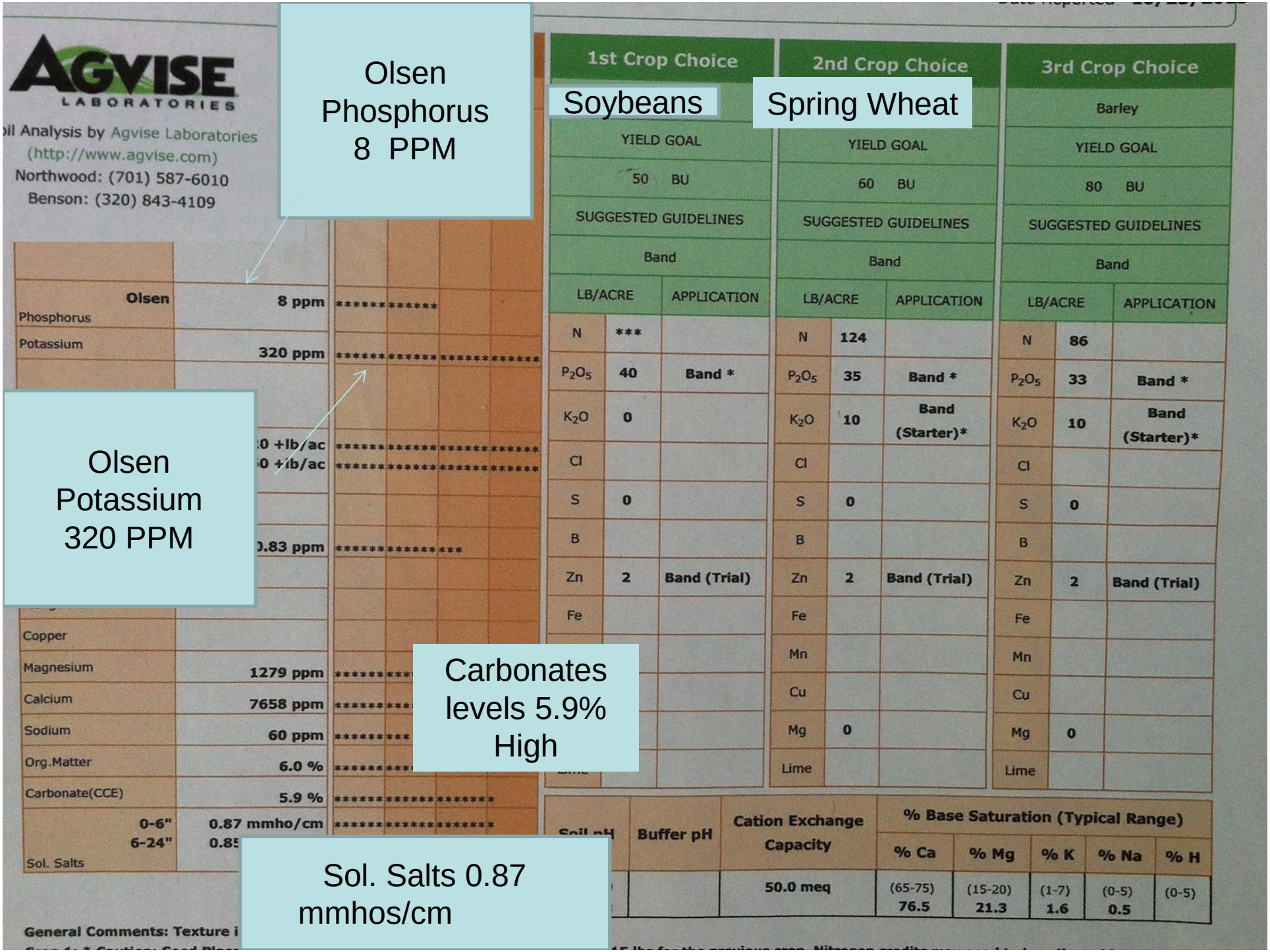
Things to keep in Mind About IDC

- **Intensity, Timing and Longevity varies from year to year**
- **In bad years – catches us unprepared!!**
- **Patient and close observation is required**

Next Steps...

- Symptoms begin on the trifoliate leaves (2nd to 3rd Trifoliate

  Can it affect yield?
- NDSU Research – IDC persisting into the 5th and 6th trifoliate will reduce yield.



AGVISE LABORATORIES

Soil Analysis by Agvise Laboratories
(http://www.agvise.com)
Northwood: (701) 587-6010
Benson: (320) 843-4109

Olsen Phosphorus 8 PPM

Olsen Potassium 320 PPM

Carbonates levels 5.9% High

Sol. Salts 0.87 mmhos/cm

Olsen Phosphorus	8 ppm	**********
Potassium	320 ppm	**********
		**********
		**********
Copper		
Magnesium	1279 ppm	**********
Calcium	7658 ppm	**********
Sodium	60 ppm	**********
Org.Matter	6.0 %	**********
Carbonate(CCE)	5.9 %	**********
Sol. Salts 0-6"	0.87 mmho/cm	**********
Sol. Salts 6-24"	0.85	**********

1st Crop Choice		
Soybeans		
YIELD GOAL		
50 BU		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	***	
P_2O_5	40	Band *
K_2O	0	
Cl		
S	0	
B		
Zn	2	Band (Trial)
Fe		
Mn		
Cu		
Mg		
Lime		

2nd Crop Choice		
Spring Wheat		
YIELD GOAL		
60 BU		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	124	
P_2O_5	35	Band *
K_2O	10	Band (Starter)*
Cl		
S	0	
B		
Zn	2	Band (Trial)
Fe		
Mn		
Cu		
Mg	0	
Lime		

3rd Crop Choice		
Barley		
YIELD GOAL		
80 BU		
SUGGESTED GUIDELINES		
Band		
LB/ACRE		APPLICATION
N	86	
P_2O_5	33	Band *
K_2O	10	Band (Starter)*
Cl		
S	0	
B		
Zn	2	Band (Trial)
Fe		
Mn		
Cu		
Mg	0	
Lime		

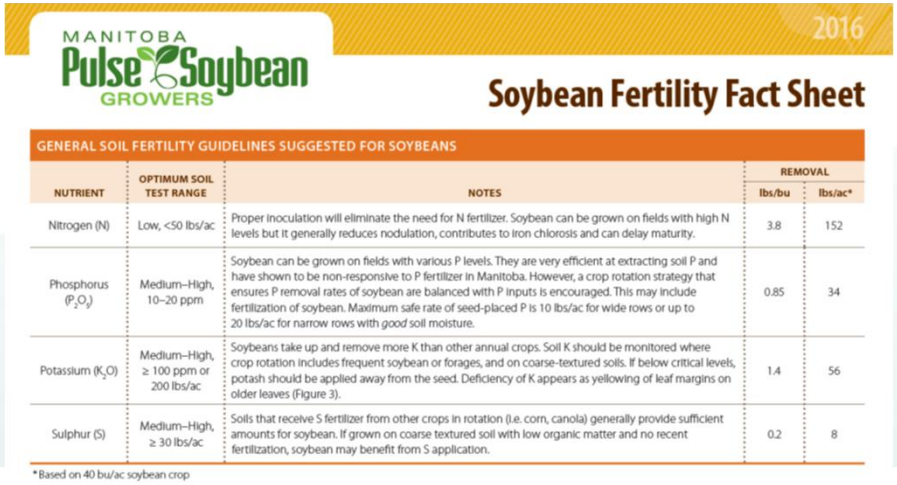
Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			% Ca	% Mg	% K	% Na	% H
		50.0 meq	(65-75) 76.5	(15-20) 21.3	(1-7) 1.6	(0-5) 0.5	(0-5)

General Comments: Texture i

IDC – the chemistry at work

- Short version - When you have wet soils with high levels of carbonates and soluble salts, the plant cannot take up the Fe it needs
- Fields with a carbonate level <1% and a salt level <0.3 mmhos/cm would have a low risk of iron chlorosis
- Fields with a carbonate level >5% and a salt level >1.0 mmhos/cm have a high risk of iron chlorosis.

IDC



MANITOBA Pulse Soybean GROWERS

2016

Soybean Fertility Fact Sheet

GENERAL SOIL FERTILITY GUIDELINES SUGGESTED FOR SOYBEANS

NUTRIENT	OPTIMUM SOIL TEST RANGE	NOTES	REMOVAL lbs/bu	REMOVAL lbs/ac*
Nitrogen (N)	Low, <50 lbs/ac	Proper inoculation will eliminate the need for N fertilizer. Soybean can be grown on fields with high N levels but it generally reduces nodulation, contributes to iron chlorosis and can delay maturity.	3.8	152
Phosphorus (P_2O_5)	Medium–High, 10–20 ppm	Soybean can be grown on fields with various P levels. They are very efficient at extracting soil P and have shown to be non-responsive to P fertilizer in Manitoba. However, a crop rotation strategy that ensures P removal rates of soybean are balanced with P inputs is encouraged. This may include fertilization of soybean. Maximum safe rate of seed-placed P is 10 lbs/ac for wide rows or up to 20 lbs/ac for narrow rows with *good* soil moisture.	0.85	34
Potassium (K_2O)	Medium–High, ≥ 100 ppm or 200 lbs/ac	Soybeans take up and remove more K than other annual crops. Soil K should be monitored where crop rotation includes frequent soybean or forages, and on coarse-textured soils. If below critical levels, potash should be applied away from the seed. Deficiency of K appears as yellowing of leaf margins on older leaves (Figure 3).	1.4	56
Sulphur (S)	Medium–High, ≥ 30 lbs/ac	Soils that receive S fertilizer from other crops in rotation (i.e. corn, canola) generally provide sufficient amounts for soybean. If grown on coarse textured soil with low organic matter and no recent fertilization, soybean may benefit from S application.	0.2	8

*Based on 40 bu/ac soybean crop

Manitoba

TABLE 1. FIELD RISK OF IDC BASED ON CARBONATE AND SOLUBLE SALT SOIL TEST LEVELS

SOLUBLE SALTS	CARBONATE LEVEL (%)		
(mmhos/cm)	0 to 2.5	2.6 to 5	>5.0
0 to 0.25	Low	Low	Moderate
0.26 to 0.50	Low	Moderate	High
0.50 to 1.0	Moderate	High	Very high
>1.0	High	Very high	Extreme

IDC – what to do?

- Patience – go away for a week
- Products – ortho-ortho-EDDHA Fe chelate applied with water in furrow at seeding. (Goos and Lovas, unpulbished data, 2012). – not with susceptible varieties!!
- Draw down soil nitrate levels before the soybean year
- **Variety selection for specific fields**
  - First Step - Understanding field risk for IDC
  - Second Step- Pick an appropriate variety for that field

IDC-Trial-
Data from site near WPG prone to IDC
3 reps randomized over 3 weeks

Variety Description Table Seed MB

EASTERN MANITOBA ROUNDUP READY SOYBEAN

Variety Descriptions

Manitoba Variety Zone	Company Maturity Grouping	Variety	Type[1]	Relative Days to Maturity[2] + / - of Check Average	2017	2016	2015	Yield % Check	Site Years Tested	Hilum Colour	IDC[3] Rating (1 - 5)	IDC[3] Grouping	Resistance to: SCN[4]	Resistance to: PRR[5]
	000.6	NSC LEROY RR2Y	R2Y	-13	—	-13	—	78	5	Y	2.2	ST	—	—
Very	000.9	22-60 RY	R2Y	-10	—	-10	-9	90	18	BL	2.1	ST	—	1c
Early	000.9	S0009-M2	R2Y	-8	-8	-9	-8	89	17	IY	2.2	ST	—	Rps6
Zone	000.9	PS 00095 R2	R2Y	-8	-6	-9	—	87	10	BL	1.7	T	—	—
	000.8	Nocoma R2®	R2Y	-7	-7	—	—	93	6	B	2.2	ST	—	—
	000.8	NSC Watson RR2Y	R2Y	-7	-5	-8	-8	88	17	IY	2.1	ST	—	—
	00.1	NSC RESTON RR2Y	R2Y	-6	—	-7	-5	92	28	BL	2.6	S	—	1k
	00.1	S001-B1	R2Y	-6	—	-6	—	93	5	Y	1.9	ST	—	—
	00.1	Notus R2	R2Y	-6	—	-7	-5	95	18	BL	1.7	T	—	1c
	00.3	McLeod R2	R2Y	-5	—	-5	-5	95	28	BL	1.8	ST	—	—
	000.9	S0009-D6	R2Y	-5	-5	—	—	94	6	IY	2.4	S	—	1k
	00.2	Bishop R2	R2Y	-5	—	-4	-6	91	30	IY	2.3	S	—	—
	00.3	NSC Austin RR2Y	R2Y	-5	—	-4	-5	93	9	Y	2.2	ST	—	—
	000.9	LS TRI9R2Y	R2Y	-4	-4	—	—	94	6	IY	2.5	S	—	—
	00.2	P002A63R®	RR1	-4	-4	—	—	99	6	TN	2.0	ST	—	1c
	00.1	PV 11S001 RR2	R2Y	-4	-4	—	—	94	6	Y	1.8	ST	—	—
Early	000.7	LS TRI7XT	R2X	-4	-4	—	—	88	6	GR	2.3	S	—	—
Season	00.5	S007-Y4	R2Y	-4	-2	-5	-5	105	30	IY	2.0	ST	—	1c
Zone	00.2	23-60RY	R2Y	-4	-3	-4	-4	102	30	BL	1.7	T	Yes	—
	00.3	S003-L3	R2Y	-4	-2	-4	-5	95	17	BR	2.2	ST	Yes	1c,1k
	00.2	LS 002R4N	R2Y	-4	—	-4	-3	103	24	BL	2.0	ST	Yes	—
	00.3	PS 0035 NR2	R2Y	-3	—	-3	-4	100	24	BL	1.9	ST	Yes	—
	000	Torro R2	R2Y	-3	-2	-5	—	94	17	BL	2.2	ST	—	1c
	00.6	P006T46R®	RR1	-3	-3	-4	—	99	11	BR	2.0	ST	—	1c
	00.5	Lono R2®	R2Y	-3	—	-3	-3	105	24	IY	2.0	ST	—	1k
	00.4	PS 0055 R2	R2Y	-3	—	-2	-5	97	15	IY	1.8	ST	—	1k
	00.3	Mahony R2	R2Y	-3	0	-5	-5	101	24	BL	2.9	S	—	—
	000.8	Barron R2X	R2X	-3	-3	—		91	6	BR	2.5	S	—	1c,1k
	00.5	S006-W5	R2Y	-3	-2	-3	-3	111	14	IY	2.5	S	—	1c,1k
	00.8	TH 87000 R2YX	R2X	—	—	—	—	nt*	nt	IY	2.1	ST	—	—
	000.9	NSC StarCity RRX2	R2X	—	—	—	—	nt	nt	BR	2.2	ST	—	—
	000.8	DKB0008-39	R2X	—	—	—	—	nt	nt	GR	2.2	ST	—	—
	000	P000A87R®	RR1	—	—	—	—	nt	nt	TN	1.7	T	—	1k
	00.3	Akras R2	R2Y	-2	1	-4	-4	104	35	BL	1.7	T	—	1k
	00.5	Foote R2	R2Y	-2	0	-4	—	99	11	IY	1.8	ST	—	1c
	00.3	Kosmo R2	R2Y	-2	—	-2	—	84	5	Y	1.9	ST	—	—
	000	DARIO R2X	R2X	-2	-2	—	—	88	6	BR	2.8	S	—	—
	00.3	NSC Gladstone RR2Y	R2Y	-2	1	-3	-3	100	30	BL	2.1	ST	—	1c
	00.5	24-10RY	R2Y	-2	0	-3	-2	102	44	BL	1.9	ST	—	1c
	00.3	LS 003R24N	R2Y	-2	—	-1	-2	102	21	BL	1.9	ST	Yes	1c
	00.2	MANI R2X	R2X	-1	-1	—	—	104	6	BL	1.8	ST	Yes	1c
	00.3	DKB003-29	R2X	-1	-1	—	—	103	6	BL	1.7	T	—	—
Mid	00.2	LS SOLAIRE	R2Y	-1	1	-3	—	93	11	BL	2.4	S	—	1c,1k
Season	00.7	P007A90R®	RR1	-1	-1	—	—	101	5	BL	1.9	ST	Yes	1c
Zone	00.5	Gray R2	R2Y	0	0	0	-1	100	33	BL	1.9	ST	—	1c
	00.4	LS 004XT	R2X	0	0	—	—	98	5	BL	1.9	ST	—	1c
	00.6	24-12RY	R2Y	0	1	-1	—	100	10	BL	2.0	ST	—	—
	00.4	PS 0044 XRN	R2X	0	0	—	—	101	6	BL	2.0	ST	Yes	1a,1k
	00.3	TH 33003R2Y	R2Y	0	0	0	0	100	44	BR	2.0	ST	—	1c
	00.7	NSC Richer RR2Y	R2Y	0	—	1	0	104	24	BL	1.6	T	—	1c
	00.8	P008T22R2®	R2Y	0	2	0	-1	103	29	BL	1.6	T	—	1c
	00.5	TAMULA R2	R2Y	1	1	0	—	100	11	Y	2.3	S	—	—
	00.4	TH 37004 R2Y	R2Y	1	1	—	—	99	11	BL	2.0	ST	Yes	1c
	00.3	TH 87003 R2X	R2X	1	1	—	—	108	6	BL	1.7	T	—	—

(continued) EASTERN ROUND UP READY SOYBEANS

Manitoba Variety Zone	Company Maturity Grouping	Variety	Type[1]	Relative Days to Maturity[2] + / - of Check Average	2017	2016	2015	Yield % Check	Site Years Tested	Hilum Colour	IDC[3] Rating (1 - 5)	IDC[3] Grouping	Resistance to: SCN[4]	Resistance to: PRR[5]
	00.6	DUGALDO R2X	R2X	1	1	—	—	98	5	IY	2.3	S	—	—
	00.4	DYLANO R2X	R2X	1	1	—	—	90	6	GR	2.3	S	—	—
	00.7	NSC Riverside RR2X	R2X	1	1	—	—	98	5	BL	2.1	ST	—	—
	00.6	HS 006RYS24	R2Y	1	2	1	0	100	39	BL	1.7	T	—	—
	00.2	MARDUK R2X	R2X	1	1	—	—	101	6	Y	2.0	ST	—	1c
	00.3	NSC Newton RR2X	R2X	1	1	—	—	102	6	BR	2.1	ST	—	—
	00.8	Currie R2	R2Y	2	—	2	1	103	24	BL	1.8	ST	—	1k
Mid	00.5	LS Eclipse	R2Y	2	—	2	1	108	8	BL	2.2	ST	Yes	1c
Season	00.5	NSC Starbuck RRX2	R2X	2	2	—	—	102	6	BL	2.0	ST	—	—
Zone	00.6	DS0067Z1	R2Y	2	3	1	—	102	11	BL	1.7	T	—	—
	00.7	TH 88007R2X	R2X	2	2	—	—	106	6	BL	2.2	ST	—	1c
	00.6	DKB006-29	R2X	2	2	—	—	103	5	BL	1.6	T	—	—
	00.5	BARKER R2X	R2X	2	2	—	—	104	5	BL	1.8	ST	Yes	1k
	00.5	TH 88005R2XN	R2X	2	2	—	—	100	6	BL	1.8	ST	Yes	1c
	00.7	PV 12S007 R2X	R2X	2	2	—	—	104	5	BL	2.0	ST	—	—
	00.5	DKB005-52	R2X	2	2	—	—	108	5	BL	2.0	ST	—	—
	00.5	PRO 2525R2	R2Y	2	5	1	1	107	22	BL	1.7	T	—	—
		Experimental lines that are being tested / proposed for registration in Canada												
	00.7	EXP00717 XRN	R2X	2	2	—	—	103	5	BL	1.9	ST	Yes	1k
	00.8	S008-N2	R2Y	3	3	2	—	105	9	IY	1.8	ST	—	—
	00.6	LS 006XT	R2X	3	3	—	—	100	5	BL	1.7	T	—	—
	00.8	DOMINGO R2X	R2X	3	3	—	—	97	5	IY	2.0	ST	—	—
	00.6	0066 XR	R2X	3	3	—		101	5	IY	2.4	S	—	—
Long	00.8	TH 88008 R2X	R2X	3	3	—	—	103	6	BL	1.8	ST	—	1k
Season	00.7	PS 0074 R2	R2Y	3	5	3	1	107	24	BR	1.7	ST	—	—
Zone	00.5	LS MISTRAL	R2Y	3	5	2	—	112	10	BL	1.7	T	—	—
	00.9	NSC JORDAN RR2Y	R2Y	3	—	3	—	106	4	BL	2.2	ST	—	—
	0.1	HYDRA R2	R2Y	3	—	4	1	104	12	BL	2.1	ST	—	1k
	00.5	PV 10S005 RR2	R2Y	4	4	—	—	106	5	BL	1.9	ST	—	—
	00.7	RX00797	R2X	4	4	—	—	104	5	BL	1.6	T	Yes	1c
	00.8	DKB008-81	R2X	4	4	—	—	101	5	GR	1.9	ST	—	—
	0.2	LEMPO R2X	R2X	7	7	—	—	101	5	GR	2.1	ST	—	—
CHECK CHARACTERISTICS														
TH 33003R2Y				118	117	121	115	51 bu/acre		44 site years				

* nt indicates not tested in 2017

1 R2X Indicates xtend Technolgy

2 Maturity Ratings for 2017 are average across Carman, Morris, Portage, St. Adolphe

3 Iron Deficiency Chlorosis (IDC) Groupings; T=Tolerant, ST=Semi-Torerant, S=Suceptible

4 SCN -Soybean Cyst Nematode Resitance

5 PRR Phytophthora Root Rot

IDC Tolerant Lines- Mid Season 2017

Variety	Type	Maturity Compared TH33003R2Y	Yield % Check	Site Years Tested	IDC [4] Rating (1- 5)	IDC [4] Grouping
NSC Richer RR2Y	R2Y	0	104	24	1.6	T
P008T22R2	R2Y	0	103	29	1.6	T
DKB006-29	R2X	2	103	5	1.6	T
DS0067Z1	R2Y	2	102	11	1.7	T
Akras R2	R2Y	-2	104	35	1.7	T
DKB003-29	R2X	-1	103	6	1.7	T
TH 87003 R2X	R2X	1	108	6	1.7	T
HS 006RYS24	R2Y	1	100	39	1.7	T
PRO 2525R2	R2Y	2	107	22	1.7	T

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IDC Semi-Tolerant Lines- Mid Season 2017

		Maturity	Yield	Site	IDC	
		Compared	%	Years	Rating	Grouping
Variety	Type	TH33003R2Y	Check	Tested	(1- 5)	
Foote R2	R2Y	-2	99	11	1.8	ST
MANI R2X	R2X	-1	104	6	1.8	ST
Currie R2	R2Y	2	103	24	1.8	ST
BARKER R2X	R2X	2	104	5	1.8	ST
TH 88005R2XN	R2X	2	100	6	1.8	ST
Kosmo R2	R2Y	-2	84	5	1.9	ST
24-10RY	R2Y	-2	102	44	1.9	ST
LS 003R24N	R2Y	-2	102	21	1.9	ST
P007A90R`	RR1	-1	101	5	1.9	ST
Gray R2	R2Y	0	100	33	1.9	ST

IDC Semi-Tolerant Lines- Mid Season 2017

		Maturity	Yield	Site	IDC [4]	
		Compared	%	Years	Rating	Grouping
Variety	Type	TH33003R2Y	Check	Tested	(1- 5)	
LS 004XT	R2X	0	98	5	1.9	ST
PS 0044 XRN	R2X	0	101	6	2.0	ST
TH 33003R2Y	R2Y	0	100	44	2.0	ST
TH 37004 R2Y	R2Y	1	99	11	2.0	ST
MARDUK R2X	R2X	1	101	6	2.0	ST
NSC Starbuck	R2X	2	102	6	2.0	ST
PV 12S007 R2X	R2X	2	104	5	2.0	ST
DKB005-52	R2X	2	108	5	2.0	ST
24-12RY	R2Y	0	100	10	2.0	ST
NSC Gladstone	R2Y	-2	100	30	2.1	ST
NSC Riverside	R2X	1	98	5	2.1	ST
NSC Newton	R2X	1	102	6	2.1	ST
LS Eclipse	R2Y	2	108	8	2.2	ST
TH 88007R2X	R2X	2	106	6	2.2	ST

IDC Susceptible lines- Mid Season 2017

		Maturity	Yield	Site	IDC [4]	
		Compared	%	Years	Rating	Grouping
Variety	Type	TH33003R2Y	Check	Tested	(1- 5)	
TAMULA R2	R2Y	1	100	11	2.3	S
DUGALDO R2X	R2X	1	98	5	2.3	S
DYLANO R2X	R2X	1	90	6	2.3	S
LS SOLAIRE	R2Y	-1	93	11	2.4	S
DARIO R2X	R2X	-2	88	6	2.8	S

Long Season IDC-Lines

		Maturity	Yield	Site	IDC [4]	
		Compared TH33003R2	%	Years	Rating	Grouping
Variety	Type	Y	Check	Tested	(1- 5)	
RX00797	R2X	4	104	5	1.6	T
LS 006XT	R2X	3	100	5	1.7	T
PS 0074 R2	R2Y	3	107	24	1.7	T
LS MISTRAL	R2Y	3	112	10	1.7	T
S008-N2	R2Y	3	105	9	1.8	ST
TH 88008 R2X	R2X	3	103	6	1.8	ST
PV 10S005 RR2	R2Y	4	106	5	1.9	ST
DKB008-81	R2X	4	101	5	1.9	ST
DOMINGO	R2X	3	97	5	2.0	ST
HYDRA R2	R2Y	3	104	12	2.1	ST
LEMPO	R2X	7	101	5	2.1	ST
NSC Jordan RR2Y	R2Y	3	106	4	2.2	ST
0066 XR	R2X	3	101	5	2.4	S

Dry seed Issues

- Seed lots could be dry this year(9-10% Moisture)
- Hairline cracks on seed could effect vigor
- Ask the question of your seed dealer
- Reduce fan speed to help reduce seed damage
- Soak test on seed can give you an idea on cracks

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Soybean Aphids

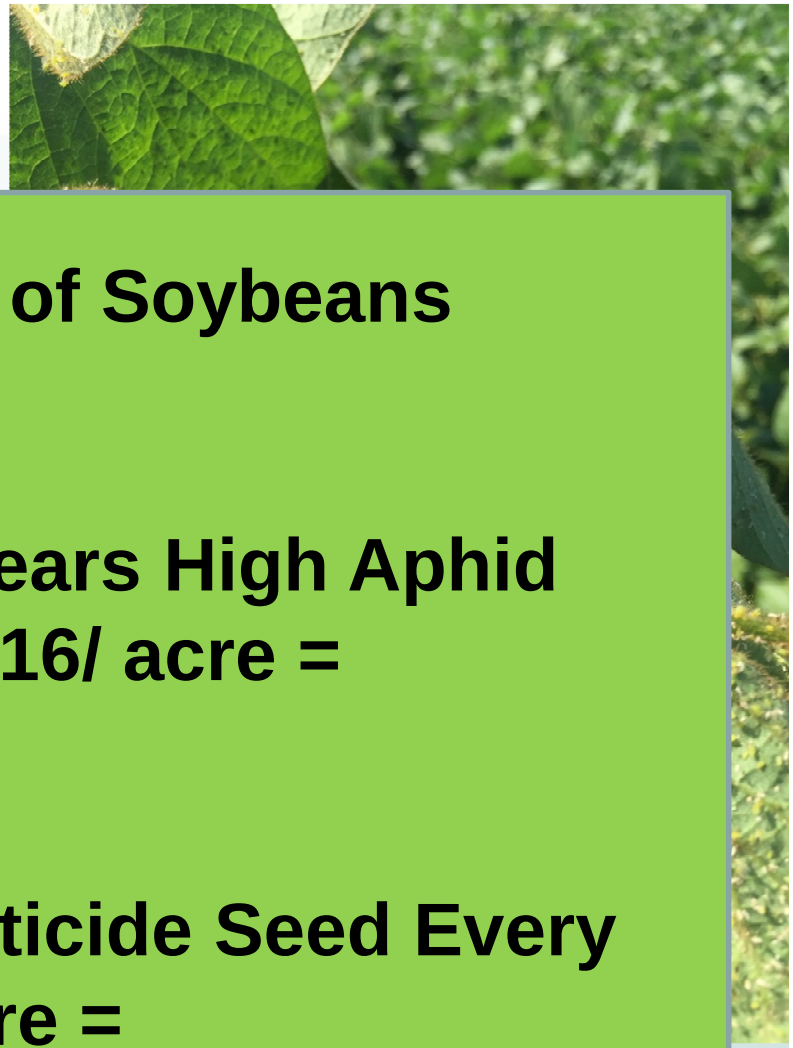
- Whether you use insecticide seed treatment or not you will still need to scout fields
- Populations should be 250 aphids/plant and increasing
- Economic injury level more like 670 aphids/plant
- Spraying too early can kill off beneficial insects
- Don’t spray just because your neighbours are

Should you Spray or Seed treat for Aphids ?

- Since 2001 there have been 4 years where soybean aphid has had a high economic status (widespread insecticide applications)
- 2 year with moderate economic status (some localized insecticide applications), and including 2001
- Since 2001 -12 years where soybean aphid was at low economic status (no insecticide applications).
- So far, each year where soybean aphids were at high economic status has been followed by at least one year of low economic status; we have not yet had 2 consecutive years with widespread economic populations of soybean aphids.

Source: Manitoba Insect Pest Reports that are prepared each year for the Western Committee on Crop Pests.

Should you Spray or



The Math on 1000 acres of Soybeans

Since 2001 (16Years) = 4 years High Aphid Pressure =Sprayed $16/ acre =

$64,000

Since 2001 (16Years) = Insecticide Seed Every Year=$7.00 /acre =

$112,000

economic populations of soybean aphids.

Soybean Variety Selection, Conclusions

- Choose varieties with suitable maturity for your region-Use Maturity Map as guide
- Yields very similar with a maturity group
- Pay close attention to IDC Scores the lower the number the more tolerant it is to IDC
- Base your decisions on multiple year data-(a variety that perform well over multiples years is better than a line that only yields high at one site/one year.

For Further Information

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