The Bean Report

Your source for soybean and pulse crop agronomy and research.

Feb/Mar 2014

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2013 Yields, Soybean field selection factors, Soybean Cyst Nematode and Grasshopper forecast

2013 Yield Data Available—record setting!

1.03 million acres of soybeans were planted in 2013 with an average yield of **38.5 bu/ac.** Both total acres planted and yields broke provincial records. The two RM's with the highest increase in soybean acres were Bifrost and Dauphin. Field pea acres were 45,536 acres, similar to 2012 with an average yield of 47.3 bu/ac which comes close to the 10 year record from 2009. Total edible bean acres were down to 93,725 acres but 2013 was rewarding – pinto and navy bean yields averaged 2224 and 2213 lbs/ac, respectively.

Table 1. 2013 Yields by Risk Area
Source: MASC

Risk area	Soy (bu/ac)	Peas (bu/ac)	Pinto (lbs/ac)	Navy (lbs/ac)
1	25.5	21.2	-	-
2	38.1	45.8	-	-
3	24.8	43.6	-	-
4	38.1	50.1	2242	2510
5	36.2	58.4	-	2328
6	32.5	52.1	-	-
7	28.8	49.6	-	-
8	30.4	-	-	-
9	35.4	40.6	-	-
10	37.0	-	2045	1888
11	40.9	45.6	2099	2323
12	42.0	-	2302	2274
14	35.6	37.2	-	-
15	32.7	60.0	-	-
32	40.0	58.0	1923	-

Edible bean meetings - next week!

NEW! Edible bean meetings will be held in Portage March 4th and Altona on March 6th. Topics include fertility, weed control, variety selection, supply and demand and growers will have the opportunity to visit with Manitoba's edible bean buyers. These 1/2 day meetings are brought to you by Manitoba's edible bean dealers and Manitoba Pulse Growers and organized by Dennis Lange of MAFRD. Info here.

Bean Report Feedback Survey

- 100% of readers agree that The Bean Report should continue in 2014!
- There were numerous requests for MPGA to provide marketing information; we are currently exploring options to provide independent market analysis and marketing advice to our grower members.
- Congratulations to Nathan Ziegler for winning the draw for a new iPad sponsored by NuFarm Agriculture. Nathan farms at Halbstadt, Manitoba.

Soybean Field Selection Factors

1. Crop rotation

- New data on the yield response of crops relative to the previous crop stubble has become available using data from 2007-2012. The majority of soybeans in Manitoba continue to be planted on wheat stubble (25%) but there are an increasing number of soybeans being planted on canola stubble (18%).
- The highest yield benefit for soybeans continues to be on corn (107%) and wheat stubble (103%) followed by canola (101%). Risks involved with planting soybean on canola ground include *Sclerotinia,* root rots and volunteer RR canola. Planting soybean on soybeans continues to show a yield disadvantage of 5%.

Table 2. Yield Response as a % of average from 2007-2012, based on previous crop stubble Source: MASC

	Crop Planted								
Previous Crop	HRS	Barley	Oat	Canola	Flax	Field Pea	Soybean	Sunflower	Grain Corn
HRS	85	98	101	104	104	103	103	101	100
Barley	89	84	93	100	96	101	100	97	99
Oat	90	86	82	92	95	97	99	100	93
Canola	102	103	104	85	88	92	101	95	95
Field Pea	100	104	98	104	124	NSD	NSD	NSD	NSD
Flax	98	110	97	104	73	101	96	98	74
Soybean	106	106	105	98	100	NSD	95	92	103
Sunflower	99	102	96	82	NSD	NSD	99	88	99
Grain Corn	100	101	106	104	NSD	NSD	107	112	87
Yield (bu/ac)	*47*	*62*	*95*	*34*	*20*		*32*	*1521 lbs*	*95*

2. Nutrient levels

- Nitrogen (N). Ideally soybeans should be planted on fields with < 50 lbs of residual N. This is because soybeans will fix the majority of their own N through biological fixation (inoculant required). Higher N fields should be left for high N using crops and high nitrate can potentially inhibit nodulation of your soybeans, particularly on fields with no previous history of soybeans.
- Phosphorus (P). Soybeans have been shown to yield better in fields with medium to high soil P compared to low soil P. This is because soybeans are more efficient at accessing soil P compared to applied P.
- Potassium (K). The critical soil test level for soybeans is ~100-125 ppm. Below this, you should consider applying potash. See Table 3 for phosphorus and potassium application suggestions for soybeans.
- *Both phosphorus and potassium have been overlooked in soybean production in Manitoba. Soil levels have been depleted in fields with a high frequency of soybeans and yield loss has been observed. Careful monitoring of these nutrients is important.*

Table 3. Phosphorous and potassium suggestions for soybeans based on soil test and yield potential (adapted from Soybean Soil Fertility, D. W. Franzen, 2013, NDSU).

	Soil test phosphorous, ppm (Olsen P)					Soil test potassium, ppm				
Yield Potential	VL 0-3	L 4-7	M 8-11	H 12-15	VH 16+	VL 0-40	L 41-80	M 81-120	H 121-160	VH 161+
(bu/ac)	(lbs P_2O_5 /ac)					(lbs K_2O /ac)				
30	40	23	10	0	0	55	33	11	0	0
40	54	31	10	0	0	73	44	15	0	0
50	67	39	11	0	0	92	55	19	0	0

2. Nutrient Levels cont'd….

- Salinity and carbonate levels. These two factors together can contribute to iron deficiency chlorosis (IDC) in soybeans by impairing the plant's ability to take up iron from the soil. Look at these values on your soil test and identify the risk of iron chlorosis from *Table 4*. If a field is at high risk, look at the IDC rating of your selected variety, or in extremely saline fields, grow a crop that is more salt tolerant.
- Detailed information on Soybean Soil Fertility
- Soil Fertility Workshop in Rivers, MB—March 4-5th

Table 4. Soybean IDC Risk (adapted from: AgVise)

Carbonate level (%)	Soluble Salts (mmhos/cm)	Risk of Iron Chlorosis
0-2.5	<0.5	Low
0-2.5	0.51-1.0	Moderate
0-2.5	>1.0	High
2.6-5	0-.25	Low
2.6-5	.26-0.5	Moderate
2.6-5	.51-1.0	High
2.6-5	>1.0	Very high
>5.0	0-.25	Moderate
>5.0	.26-.50	High
>5.0	.51-1.0	Very high
>5.0	>1.0	Extreme

3. Herbicide carry-over

- Consider what herbicides you used in your previous crop. The following herbicides have a 2 year re-cropping restriction following application. In other words, if you used any of these products in 2013, it is not advisable to grow soybeans in that field in 2014, due to risk of crop damage.
  - ⇒ Barricade, Retain, Trophy, Curtail, Prestige XC, Pulsar and Lontrel
  - ⇒ Under drought conditions or applied in fall- Fluoxypyr+ 2,4-D brands
  - ⇒ If drought conditions persist certain group 2 and 27 herbicides may have extended residual periods which may cause injury

2014 Costs of Production ($/ac)

	Soybeans	Peas	Navy Beans
Seed & treatment	$95.81	$38.50	$50.00
Fertilizer	$8.98	$11.22	$44.28
Herbicide	$9.01	$16.78	$56.44
Fungicide	$0.00	$15.03	$24.60
Insecticide	$0.00	$0.00	$0.00
Fuel	$16.72	$18.96	$20.00
Machinery Operating	$10.80	$10.50	$12.00
Crop Insurance	$28.23	$23.47	$38.20
Other Costs	$7.75	$8.25	$8.25
Land Taxes	$5.50	$5.50	$5.50
Drying Costs	$0.00	$0.00	$0.00
Interest on Operating	$5.03	$4.08	$7.13
Total Operating	**$187.82**	**$152.29**	**$266.40**

Crop budgets adapted from MAFRD.

Full Cost of Production Guidelines for Eastern and Western Manitoba are available here.

Soybean seed cost can range from approx. $80-120/ac depending on input choices. Here is a break-down assuming a seeding rate of 200,000 seeds/ac or 1.43 units/ac.

Seed	$77-83 ($54-58/unit)
Inoculant	$4-7 (1x liquid rate) *and/or* $10-12 (granular @ 5 lbs/ac)
Treatment	$7 (fungicide only) *or* $16-18 (fungicide + insecticide) *or* no seed treatment

The **herbicide cost** of $9.01 is based on two in-season applications of glyphosate. If volunteer RR canola is a problem, your herbicide cost will increase with the addition of a pre-emerge and/or in-season herbicide. Options for pre-seed management of volunteer RR canola include Cleanstart, Express SG* and Heat*.
*Must be tank mixed with glyphosate

Starting in 2013, **crop insurance coverage** for soybeans became available for all areas of Manitoba. For 2014 crop insurance summaries including dollar values, click here.

ASK AN EXPERT: Soybean Cyst Nematode (SCN)

with: Dr. Mario Tenuta
Canada Research Chair in Applied Soil Ecology
Department of Soil Science, University of Manitoba

Q: "Are there any concerns with using SCN resistant cultivars without the presence of SCN?"

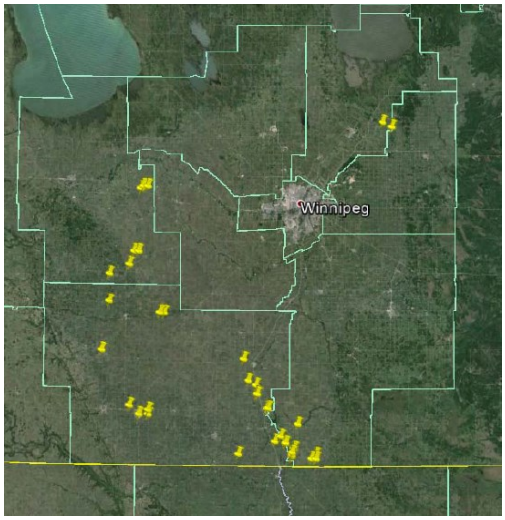
A: *Basically, resistant varieties is a miss-nomer. More correctly it is tolerant varieties. Resistant varieties still allow soybean cyst nematode to live on it but in much lower numbers. In the past there was a yield hit for using the resistant varieties but now there is not. This is shown in the 2013 Manitoba Soybean Variety trials in which several resistant varieties yield as well as the best non-resistant varieties. In 2013, the variety trials included 4 tolerant varieties; short season– 2 experimental, mid season- 1 variety, and long season- 1 variety.*

So should a grower use these varieties even if they do not have SCN? It will not hurt. If a producer has a tight soybean rotation it could be very helpful to slow the buildup of SCN in their fields. Practicing good rotation (1 in 3 years with soybean) and resistant varieties mean SCN buildup will not occur for the near future.

Research Update:

Dr. Tenuta and his team sampled 48 fields for SCN from November 2012 to August 2013 (pictured to right). SCN was not detected in any of these fields. The SCN survey will continue in 2014 and will concentrate on light soils in the Portage-Winkler area.

SCN is the #1 yield robbing pest in the US and Ontario. It is simply a matter of time before it appears in Manitoba. Growers and agronomists need to be vigilant in scouting suspect areas during the growing season. Areas at risk for SCN are those with a long history of soybean and dry bean production, high frequency of these crops in rotation and close proximity to waterways from the US. More information on scouting will be available in-season.



2014 Manitoba Grasshopper Forecast *Read more*

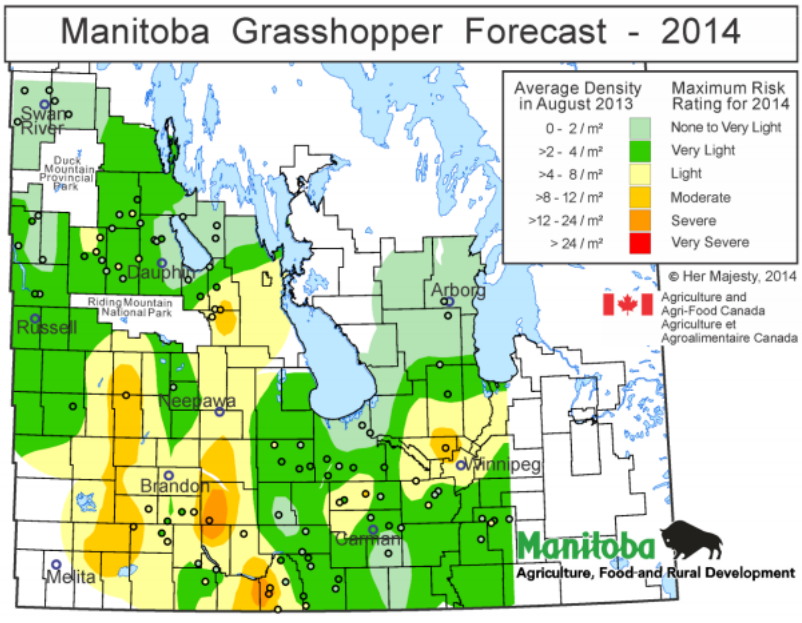


Figure 1. Average density of grasshoppers in Manitoba during August 2013.

Manitoba Pulse Growers Association Inc.