



R-6 (Full Seed) - seeds fill the pod on top 4 nodes, but pod and seed abortion are evident from lack of moisture

- Yield potential reduced due to lack of moisture during pod and seed fill
- Late arrival of soybean aphids
- Soybean disease survey underway
- MPGA Bean App—yield estimation
- 2014 variety market share
- Evaluation of dry bean desiccation and harvest aid options

## Soybeans

Soybeans in south-central and eastern MB are at full seed (R-6 to R-6.5) and 20-25 days from maturity. Early varieties and fields with severe moisture deficit are yellowing and dropping leaves. Current rains will not contribute much to soybeans already in full seed. Western Manitoba soybeans are mostly in the early seed stage (R-5) and 30-35 days from maturity. High weed pressure is being observed in some soybean fields and growers are raising the question of using a harvest-aid product to manage weed escapes which should not be done until 80-90% leaf drop and grain moisture is <30%. Soybeans were less competitive this year due to delayed canopy closure.

Manitoba Pulse Growers Association has started a **Soybean Disease Survey** to record stem, leaf and root diseases present in soybean fields in Eastern and Central Manitoba. Presence of volunteer canola and soybean aphids are also being noted. Downy mildew, bacterial blight and septoria brown spot are prevalent with few cases of root rot and white mould. Previously dry conditions have been beneficial for low disease pressure but has taken a toll on yield potential. If you are interested in taking yield estimates in your soybean field, try the [MPGA Bean app](#). Taking an accurate plant stand count is important and can have a large effect on yield estimates. Due to stressful growing conditions during R-5, the average number of seeds per pod is about 2.1-2.4, instead of 2.5 which was seen in 2014.

Soybean aphids have made a late arrival in Manitoba but there is no need to worry. All fields surveyed this week have very low levels of soybean aphid (<25 aphids per plant). This is significantly below the economic threshold of 250 aphids per plant *and increasing* when soybeans are in the R-1 to R-5 stage. The threshold does not change with commodity or control prices. Keep scouting until R-6.5 at which time treatment is discouraged.



## Dry beans

Early maturity in dry beans is noticeable in fields lacking moisture in southern Manitoba. Dry bean staging ranges from R-7 to R-9 with early reports of desiccation starting. High weed pressure is a problem in many fields due to low plant population and lack of canopy closure. Short plant height will also be a difficult factor heading into harvest and

may impact quality. Careful choice and timing of harvest-aid product heading into harvest may help with late season weed pressure and improve quality. Yield potential has also been reduced in many dry bean fields due to lack of moisture, with pod and seed abortion evident. Trace levels of white mold and rust in navy beans has been observed. Reports of bacterial blight have also been received and may increase with the current wet conditions.

### Scouting yellow, early maturing areas of the field

**Q:** Noticing early maturing areas of your soybean field?

**Q:** High frequency of soybeans and/or dry beans?

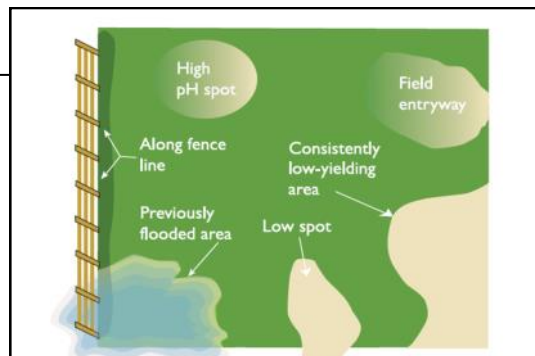
**Q:** Located near Red River Valley or US border?

If you answered yes to these 3 questions, it's a good idea to take a closer look. Several factors may cause pre-mature yellowing (moisture stress, iron chlorosis, disease, nutrient deficiency) but one factor in particular warrants investigation: **soybean cyst nematode**.

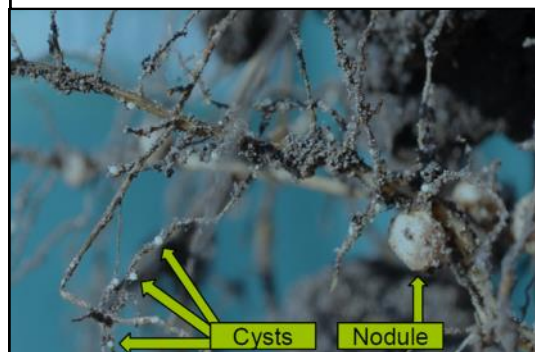
This is the #1 yield robbing pest of soybean growing areas in the US. It is a nematode that lives in the soil and infects soybean roots. In many years, there are no above ground symptoms, however in a year like this with late season moisture stress, symptoms may appear and early detection is important.

MPGA funds an annual survey conducted by Dr. Mario Tenuta at the University of Manitoba to test soil in high risk areas. As of fall 2013, SCN has not been detected in Manitoba, but growers should still be vigilant.

**How to scout:** Take a shovel and bucket of water out to the field and dig up soybean plants in suspect areas (Figure 1). Assess roots for soybean cysts (Figure 2). Give us a call if you suspect something.



**Fig 1.** High risk areas for soybean cyst nematode. Source: SCN Field Guide, ISU



**Fig 2.** Cysts are much smaller, lighter colored and lemon shaped compared to nodules. Source: Sam Markell, NDSU

### 2014 Variety Market Share Report Source: MASC

SOYBEANS	% of acres	FIELD PEAS	% of acres	NAVY BEANS	% of acres
24-10RY	9.9	CDC Meadow	37.9	T9905	34.8
TH 32004R2Y	6.6	Agassiz	19.8	Envoy	28.9
900Y61	6.1	CDC Striker	10.1	T9903	17.8
NSC Reston RR2Y	5.6	CDC Patrick	6.1	Indi	9.1
NSC Richer RR2Y	5.5	4010	5.9	Lightning	4.5
23-10RY	5.0	<b>Total seeded acres</b>	<b>52,407</b>	<b>Total seeded acres</b>	<b>50,273</b>
25-10RY	4.8	PINTO BEANS	% of acres	KIDNEY BEANS	% of acres
LS 002R23	4.2	Windbreaker	91.4	Pink Panther	63.9
TH 33003R2Y	3.9	White Mountain	2.9	Clouseau	19.7
Pekko R2	3.5	AC Ole	1.8	Red Hawk	11.4
<b>Total seeded acres</b>	<b>1.3 M</b>	<b>Total seeded acres</b>	<b>41,620</b>	<b>Total seeded acres</b>	<b>17,210</b>

## Desiccation and harvest-aid options in edible beans

Uneven maturation and high weed pressure in 2014 due to reduced plant populations are evident. Now is the time to consider your harvest aid options, review [2014 MRL information](#) and **speak with your buyer to discuss potential marketing issues.**

A dry bean study<sup>1</sup> from 2010-2012 was conducted to evaluate the effect of tank-mixing different contact herbicides (Aim, Reglone, Valtera and Heat) with glyphosate on yield, weed control, seed quality and residue accumulation. This project was supported by MPGA. Here is a summary of the results:

Heat (safulfenacil), Reglone (diquat) and Valtera (flumioxazin), had the highest dry down of pod, stem and leaf material at 4 and 8 days after application (DAA). All were superior compared to glyphosate applied alone. For example tank-mix combinations provided 87% leaf desiccation compared to 67% with glyphosate alone 8 DAA.

Heat (saflufenacil), Reglone (diquat) and Valtera (flumioxazin) alone or in combination with glyphosate provided consistent desiccation of dry bean and adequate dry down of redroot pigweed, lambsquarter and green foxtail. Adding a tank-mix partner to glyphosate significantly increased weed desiccation at 4 and 8 days after application. For example, tank-mix combinations provided 68% weed desiccation of redroot pigweed compared to 44% with glyphosate alone at 8 DAA.

At the Manitoba site<sup>2</sup>, Reglone (diquat) and Heat (saflufenacil) tank-mixed with glyphosate provided the most consistent results for preventing glyphosate residue accumulation in dry bean seed while facilitating desiccation and adequate late season weed control.

Timing is very important—application before 75% pod color change can negatively affect yield and increase residue accumulation in the seed<sup>2</sup>. Environmental conditions and weed staging can have an important effect on the efficacy of these harvest-aid products. Weeds close to maturity and cool temperatures at time of application will reduce efficacy.



### Desiccation Timing in Dry Beans

- 80-90% leaf drop
- 80% of pods yellow
- Seed moisture <30%

### Registered products for harvest-aid in dry edible beans in Manitoba

Product (chemical)	Group	Notes
Aim (carfentrazone-ethyl)	14	Contact for desiccation, rapid plant dry down
Glyphosate	9	Systemic for perennial weed control. Not for use on crops intended for seed.
Cleanstart	9 + 14	Contact + Systemic
Valtera (flumioxazin)	14	Contact for desiccation, rapid plant dry down
Reglone (diquat)	22	Contact for desiccation, rapid plant dry down
Heat (saflufenacil)	14	Contact and systemic activity

<sup>1</sup>Soltani, N., Blackshaw R. E., R. E. Gulden, R. H. Gillard, C. L., Shropshire, C. and Sikkema, P. H. 2013. Desiccation in dry edible beans. Cdn. J. Plant Sci. 93: 871-877.

<sup>2</sup>Waddell, K. 2013 The Evaluation of Harvest Aid Herbicides for Dry Bean (*Phaseolus vulgaris* L.) Production in Manitoba. Print. MSc. Thesis. University of Manitoba.