The Bean Report

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MANITOBA Pulse & Soybean GROWERS

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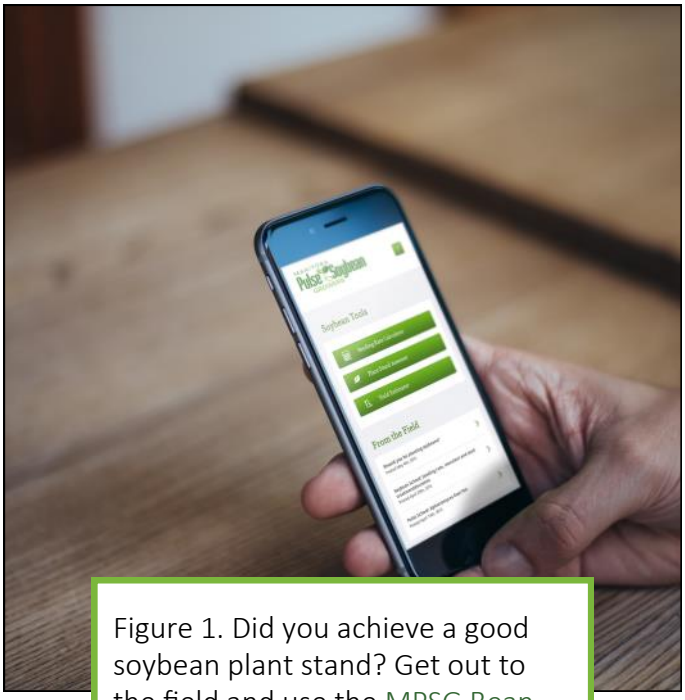


Figure 1. Did you achieve a good soybean plant stand? Get out to the field and use the MPSG Bean App to find out!

Crop Update

Seeding has nearly wrapped up across the province. Weather challenges were thrown our way leading to multiple seeding windows that took place within the past 6 weeks. This has made it made difficult to predict how close we came to acreage predictions for soybeans, edible beans and peas. Stay tuned for seeded acreage reports.

Soybeans range from emerging to 1st trifoliate stage. Early season scouting includes assessing plant stand emergence and monitoring weed growth. The frost on May 30 resulted in minimal damage since crop emergence was not widespread but some injury occurred in the Central region. Re-growth from axillary buds is now present in those frost-injured plants. Early season root rots are not being observed but are still anticipated to occur. High risk fields include those that are saturated and were slow to emerge (>3 weeks).

Dry bean planting is nearly complete. Crops are emerging to unifoliate. Crusting is occurring where high rainfall amounts were received. There are concerns over negative impacts of excess moisture but it is still too early assess impact. Dry conditions look to prevail over the next week. Weed control will be critical as usual in dry beans and farmers and agronomists should pay close attention to weed spectrum and herbicide choice to address problem weeds. The last issue of *Pulse Beat* magazine included information on the most common herbicides used in dry beans. If you missed it, check out the online magazine.

Field peas are in the 5th to 8th node stage, with herbicide applications taking place and wrapping up as the window closes. Scouting for root rots will be important in wet soil conditions and thinking about fungicide timing in the next few weeks.

Table 1. Weather Summary May 25 to June 9

	Total Rainfall (mm)	% Normal Rainfall	Accumulated GDD	% Normal GDD
Dugald	25	63	130	80
Carman	48	172	135	80
Gretna	67	171	138	78
Morris	67	239	136	81
Portage	32	104	138	84
Dauphin	0	0	135	92
Melita	89	169	144	89
Brandon	20	82	130	85
Woodlands	21	63	135	83

Cutworms and established plant stands for soybeans and pulses

Few reports of cutworm feeding in dry edible beans and soybeans have been received. The nominal threshold is **1 cutworm per 3' of row and cutworms are <2cm long**. This is not a research-based threshold so consider these 3 factors when making a decision to spray:

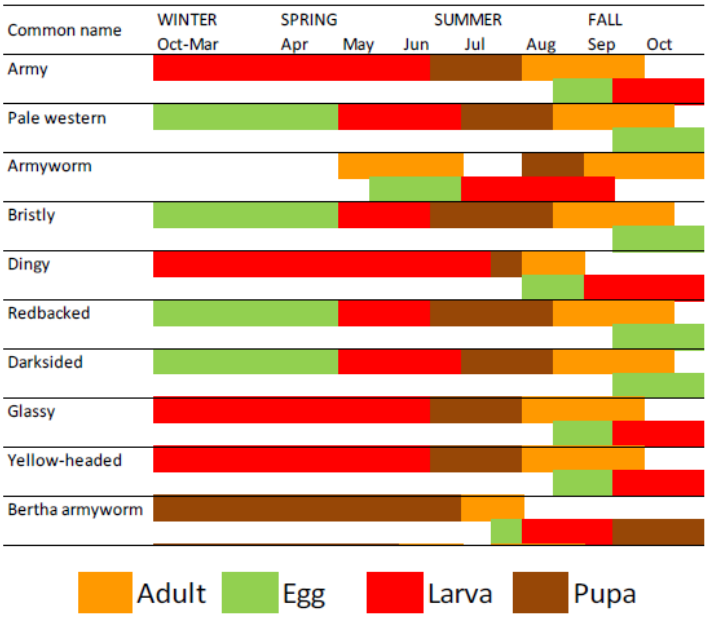
1. **Assess plant stand** and stay within proximity of the optimum range especially for dry beans.
2. **Monitor larval size**—mature larvae of dark-sided, dingy and red-backed cutworms are 1.5 to 2" in length. As they approach mature size, they will stop feeding and move into the pupa or resting stage.
3. **Monitor distribution**—cutworms can be found in localized areas and patch spraying may be economical.

Table 2. Suggested established plant stands for soybeans and pulses (live plants)

	plants/ac	plants/ft^2
Soybeans†	120-160,000	3.2-3.7
Pinto beans‡	65-75,000	1.5-1.7
Navy and black beans‡	85-95,000	1.9-2.2
Peas§	300-350,000	7-8

† Manitoba data, ‡ North Dakota data, § Saskatchewan data

Figure 2. Life cycle of cutworm species across the Prairies. The larval stage feeds on field crops and are present for most of June. Source: K. Floate AAFC



Seeding depth debate

Seeding depth was a hot topic in April and can be an important factor affecting emergence timing. Conditions appeared dry and farmers were wondering if they should plant deeper into moisture. As it turned out, we had no shortage of spring moisture in Manitoba yet again. For soybeans, optimum **seeding depth is 0.75" to 1.5".**

Observations this spring found several early-planted fields that were planted quite deep (≥2") and took longer to emerge (up to 1 month). In some later planted fields that were sown in warm, moist soil, a depth of 0.5-0.75" turned out well, with emergence within as little as 5 days.

Depth control can vary depending on equipment and field conditions. It is important to understand your equipment and the effects of rolling which can increase soil cover. Measuring soil depth after emergence will show you what depth was actually reached.

Studies from other regions conclude that shallow planting (1") results in higher, faster emergence in wet springs. But in dry springs, deeper (2") was better. But it is difficult to predict what conditions will be like after seeding.

Measure the distance of the hypocotyl between the base of the cotyledon (where radicle growth begins) and the green tissue near the top (where the hypocotyl pulls the cotyledons through the soil and photosynthesis begins)

Weed control in soybeans

Timely weed control in soybeans is key to optimizing yield potential, especially under dry conditions. The first in-crop herbicide application should occur when **weeds are ≤ 4 inches high** to prevent yield loss.

1. **Scout weekly—know your weeds and staging.**

   Early weed removal timing is important. North Dakota studies have shown yield reduction of 1-2 bu/ac when weeds reach 6-8 inches in height.

2. **Choose your herbicide(s) —for RR soybeans, would an additional mode of action be beneficial?**

   Is volunteer RR canola present? A threshold has been identified as 2.4 plants/m^2 in narrow row soybeans in Manitoba (Gulden et al. 2014). At this density, it can cause ≥5% yield loss and control is warranted. Canola is best controlled early (3-4 lf stage).

   Is kochia present? Populations of this weed have developed glyphosate tolerance in eastern Manitoba. Kochia is best controlled pre-emergence. In-crop options are glyphosate, Basagran and Flexstar (RR Valley only) and all require weeds to be SMALL.

3. **Scout 7-10 days after application**

   Evaluate control and identify why there may be escapes (sprayer miss, too large, glyphosate resistance?).

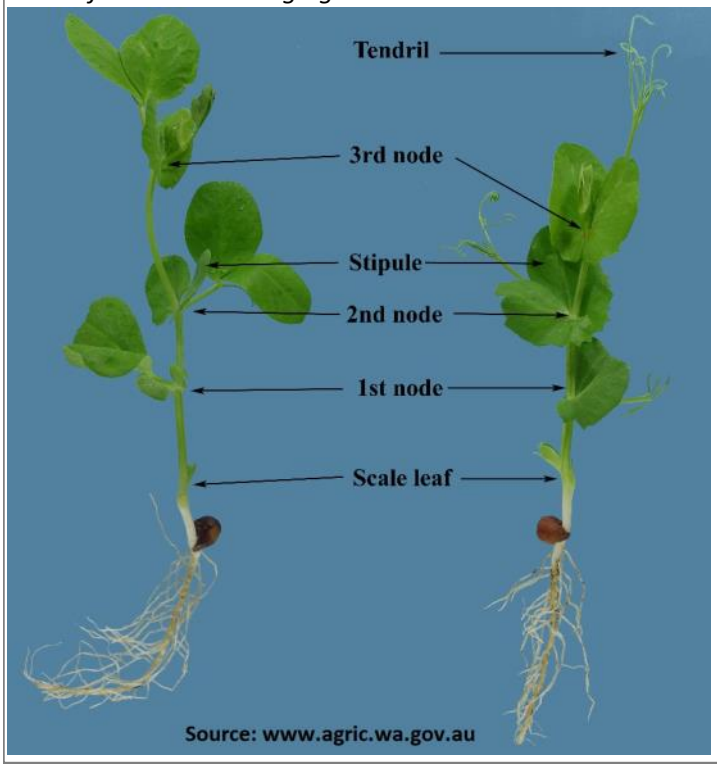
Table 3. Effect of weed removal timing on soybean yield
Source: NDSU 2011-12

Weed height	Soybean Stage	Yield (bu/ac)
At planting (soil application)		44.3
2-4 inches	V-C to V-1	46.9
6-8 inches	V-2 to V-4	45.2
>10 inches	V-3 to R-2	37.7

Field pea crop staging and thinking ahead to fungicide timing

Field pea acres are expected to climb in Manitoba this year. Questions are being received on proper crop staging for herbicide timing. There is a universally accepted system to stage peas by companies and researchers:

When field pea emerges, two small scale or scar leaves appear. These do not form stipules and therefore are not counted as true leaves. And while technically they are growing points or nodes, they are often not counted as nodes for herbicide staging.



Thinking ahead to fungicide timing

Results from the SK-MB field pea input study showed that in high yielding environments where a thick canopy develops, a fungicide application can protect and maintain yield. When looking at the economic gain of various inputs (Table 4), a double or triple combination of a high seeding rate, use of granular inoculant and fungicide provided the highest relative gains. This is compared to the fungicide input alone which shows it is likely to be less beneficial if a high crop density (resulting from a high seeding rate) is not achieved. The high seeding rate in this study resulted in an average established plant stand of 102 plants/m^2. The fungicide treatment included Headline EC at 10% flower followed by an application of Priaxor DS 10-14 days later. The goal of the fungicide is prevention of *Myscosphaerella* blight.

Table 4. Economic gain with inputs compared to empty package

Treatment Ranking	Gain $/ac
SR+GI+Fn	72
SR+GI	53
SR+Fn	50
GI+Fn	45
GI	37
SR	37
Fn	10
Empty	0

SR = seeding rate
GI = granular inoculant
FN = Foliar Fungicide
Empty = low seeding rate, liquid inoculant, no fungicide