



**October 21, 2013**

## *This week....*

- FINAL Bean Report for 2013 Growing Season
- Record yields for edible and soybeans?
- Results: residue management survey
- Crop rotation planning for 2014
- Interpreting soil test analyses for soybeans

## **Harvest nearly complete**

Soybeans are considered 95% complete province wide with weather delays in Northwestern Manitoba. Yields continue to range widely from 30-50 bu/ac with fewer reports of 20-30 bu/ac. Provincial average soybean yields were 36.0 and 26.7 in 2012 and 2011, respectively. 2013 will likely be even higher.

Quality is generally good for soybeans, with some reports of green seed. While most early harvested soybeans came off dry, some later harvested fields came off at higher moisture. Information late harvest and storage is available [here](#). An article in the Manitoba Cooperator (Oct 17) also has good tips on aerating and drying. If you missed it, check it out [here](#).

Harvest of edible beans is considered 100% complete across the province. Above average yields are consistent with reports of up to 3000 lbs/ac. Quality is also rated as good with good seed size despite some white mold pressure.

*MPGA Working for you!*

## **This will be the FINAL Bean Report for the 2013 growing season**

Would you like to see it again in 2014? We want your feedback. A survey will be emailed out in a few weeks looking for feedback from our readership, including farmers and industry.

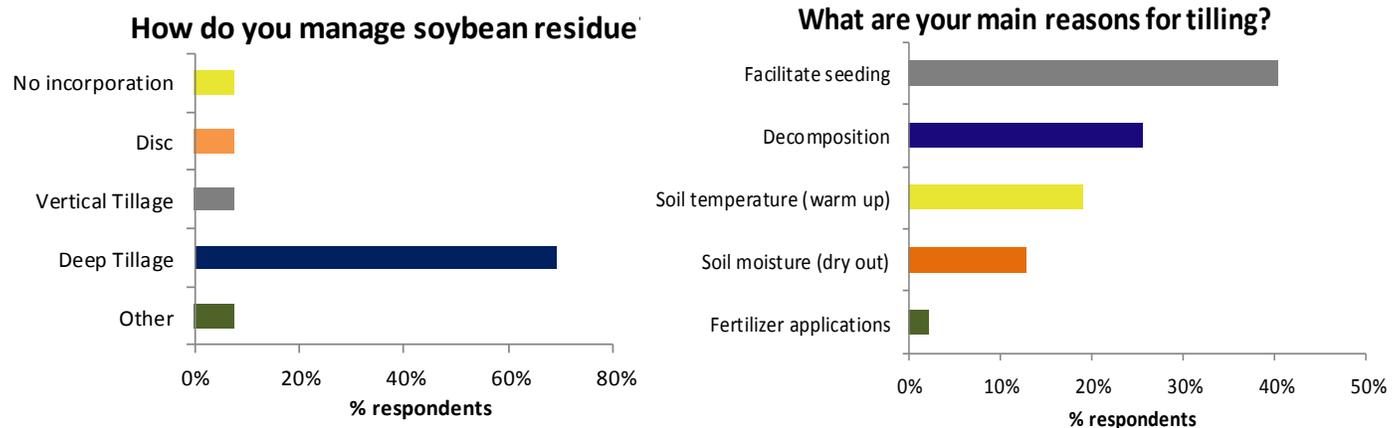
Thank you all the growers and industry members who read The Bean Report and contributed to our surveys. This newsletter turned out to be very interactive.

The Bean Report is made possible by grower levy dollars and brought to you by the Manitoba Pulse Growers Association.

**Did you miss an issue of The Bean Report? [View previous issues here.](#)**

## Results: soybean residue management survey

The majority of soybean growers in Manitoba are using deep tillage to manage their soybean residue. This is representative of the fact that the majority of soybeans are grown in the Red River Valley, where conventional tillage practices are used. Soybean is a relatively low residue crop, although most farmers in the survey rated it as moderate (62%). Since in other major soybean growing areas, wheat is generally no-tilled following soybeans, it was of interest to find out why farmers in Manitoba are deciding to till. The #1 reason from our survey is to facilitate seeding, followed by decomposition. While tillage system is unique to soil conditions and no-till in heavy clays is a tall order, advancements in seeding and tillage technology, changes in crops and environmental conditions may have us re-thinking our tillage system with soybeans. Soybeans may provide an opportunity in the crop rotation to reduce tillage, saving labour and fuel \$\$, and reducing erosion of soil and nutrients.



Looking for comments from experienced corn and soybean growers on new tillage techniques and equipment? Check out [Tillage Ontario](#), a website with profiles of farmers using coulters, no till, cultivators etc.

## Crop rotation planning: considerations for soybeans

- The majority of soybeans in Manitoba are planted on spring wheat stubble (25%) followed by oat stubble (17%), which is good because the highest soybean yields follow a cereal crop (Table 1). [On the other hand, crops with the highest yield following soybeans are spring wheat, grain corn and winter wheat.]

**Table 1. Yield response of major Manitoba crops sown on large (>120 acre) fields of various previous crops (stubble) in rotation from 2003-2007 (source - MASC).**

| Previous Crop | Crop Planted |     |        |     |        |      |     |         |           |           |            |
|---------------|--------------|-----|--------|-----|--------|------|-----|---------|-----------|-----------|------------|
|               | HRW          | HRS | Barley | Oat | Canola | Flax | Pea | Soybean | Navy Bean | Sunflower | Grain Corn |
| HRW           | 91           | 94  | 100    | 99  | 88     | 100  | 96  | 96      | 106       | 97        | 108        |
| HRS           | 100          | 100 | 100    | 100 | 100    | 100  | 100 | 100     | 100       | 100       | 100        |
| Barley        | 102          | 103 | 86     | 90  | 95     | 96   | 95  | 94      | 84        | 104       | 84         |
| Oat           | 107          | 103 | 87     | 86  | 88     | 91   | 93  | 98      | 98        | 100       | 113        |
| Canola        | 114          | 116 | 104    | 103 | 79     | 87   | 90  | 97      | 93        | 93        | 108        |
| Flax          | 106          | 107 | 102    | 98  | 91     | 72   | 87  | 79      | .         | 100       | .          |
| Pea           | 102          | 111 | 100    | 103 | 96     | 108  | .   | .       | .         | .         | .          |
| Soybean       | 106          | 117 | 102    | 101 | 78     | 93   | NS  | 97      | .         | 104       | 108        |
| Navy Bean     | .            | 140 | 131    | 118 | 113    | .    | .   | 97      | 89        | 112       | 134        |
| Sunflower     | .            | 104 | 96     | 96  | 68     | 87   | .   | 101     | 90        | 96        | 98         |
| Grain Corn    | .            | 124 | 110    | 109 | 101    | .    | .   | 98      | 100       | 104       | 99         |

## Crop Rotation planning cont'd...

- Choose a field with low residual nitrate. Since soybeans fix their own nitrogen, residual nitrogen is best left for a crop that needs it.
- Choose a field with medium to high soil test phosphorous. Soybeans have been shown to respond better to soil fertility compared to fertilizer P. For fields that require additional P, it's more efficient to plant crops that respond better to fertilizer P, such as canola and wheat.
- Consider salinity and previous iron deficiency chlorosis symptoms.
- Consider stoniness. Soybean plants have pods close to the ground and need to be harvested as close to the ground as possible. For this reason, soybean land is rolled after planting. If you don't have access to a roller, you should have a stone-free field for ease at harvest.

## Interpreting soil test analyses for soybeans

If you haven't already, it is important to soil test in the fall to ensure soil nutrient levels are optimum for soybean production. This is particularly important in 2013 with record crop yields that are removing lots of nutrients too.

**P** Although current data on optimum phosphorous levels for soybeans is lacking in Manitoba, detailed recommendations are available from North Dakota (Table 2). At low soil test P (<12 ppm), the probability of response is high. At medium to high soil test P (>15 ppm), the probability of response is low. Soybean seed removes a high amount of P from the soil, therefore it is especially important to soil test fields with a high frequency of soybeans. If your soil test is low, pre-plant applications of P have been shown to be more beneficial than seed placed. Due to the sensitivity of soybeans, a maximum of 10 lbs can be placed with the seed in narrow rows (<15") and none in wide rows.

**K** Soybeans remove more potassium than wheat, canola or sunflowers. Deficiencies are showing up not only on sandy soils, which are inherently low in K, but also on clay soils with a high frequency of soybeans. Potassium fertilizer is recommended if soil test K is less than 150 lbs/ac.

**N** Soybeans do not require nitrogen fertilizer but do require inoculation to facilitate biological nitrogen fixation. The majority of growers in Manitoba are currently using two types of inoculant for good insurance but some studies have shown that if a field has a history of soybeans, that in fact no inoculation is required. An MPGA funded research study is currently investigating the use of liquid vs. liquid + granular in 10 field scale trials.

**Table 2. Phosphorous and potassium recommendations for soybeans based on soil test and yield potential\* (adapted from Soybean Soil Fertility, D. W. Franzen, 2013, NDSU).**

| Yield Potential (bu/ac) | Soil test phosphorous, ppm (Olsen P) * |    |    |   |    | Soil test potassium, ppm |    |    |   |    |
|-------------------------|--|----|----|---|----|--------------------------|----|----|---|----|
|                         | VL                                     | L  | M  | H | VH | VL                       | L  | M  | H | VH |
|                         | lb P <sub>2</sub> O <sub>5</sub> /ac   |    |    |   |    | lb K <sub>2</sub> O /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  |

\* Soils in Manitoba tend to be slightly cooler in spring compared to parts of ND and MN, therefore you should also consider the recommendations in the Manitoba Soil Fertility, [available here](#)