**MPSG ANNUAL EXTENSION REPORT**

**An economic assessment of the quality discount for Manitoba soybeans**

**PROJECT TITLE:**

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| --- | --- |
| **PROJECT START DATE: 1 April 2019** | **PROJECT END DATE: 31 March 2020** |

**DATE SUBMITTED: 9 February 2019**

***PART 1: PRINCIPAL RESEARCHER***

**PRINCIPAL**

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PART 2: EXECUTIVE SUMMARY

Varietal differences and perhaps differences in cultural practices and climate have Manitoba soybeans showing lower protein levels than those of soybeans produced by US and eastern Canadian counterparts. The value of Manitoba soybeans can therefore be discounted below that of soybeans grown in the United States and eastern Canada which can be an economic loss for soybean farmers. The research objectives are to assess what makes up the discounted value of Manitoba soybeans, to assess the discounted value of Manitoba soybeans from an processor perspective, and to assess the value of research that can narrow the quality gap. The research benefits the MPSG farmer members. Since the discount directly affects the local cash price of Manitoba soybeans, understanding what makes the discount is important market information that can directly affect producer profitability. Knowledge of the size of the quality discount will assist with research decisions regarding narrowing the quality gap, and knowledge of the size of the quality discount will assist soybean producers with production decisions relative to how much to invest to boost protein level and what constraints they may face in doing that. A review of relevant research includes review of scientific published research, industry research published by soybean associations, and journalist research reported in the farm press. Producer and soybean processor interviews document their perspectives regarding the soybean discounts. An overall assessment of the soybean discount relative to the project objectives and importance to soybean farmers is being prepared for presentation in the final project report.

*Outline the project objectives, their relevancy to pulse and soybean farmers, and a summary of the project to date, including methods and preliminary results.*

***PART 3: PROJECT ACTIVITIES AND PRELIMINARY RESULTS***

As per the project outline, soybean discount literature is being reviewed including scientific journal articles, extension publications, industry publications and articles in the popular farm press. Producers and soybean processors are being interviewed to acquire their perspectives and insights on soybean discounts. An overall economic assessment of the soybean discount is being conducted. The findings are being compiled and assessed for presentation in a final report for presentation to MPSG and a slide deck is being prepared for presentation at extension meetings. There are no deviations from the original project outline.

Mike Staton from Michigan State University Extension published in 2015 a report entitled “Understanding Soybean Discount Schedules.” The report documents standard scheduled discounts for soybeans. These include: test weight, where 60 pounds per bushel is the test weight used to convert the scale weight of a soybean load to the number of bushels contained in the load, and when the test weight falls below 54 pounds per bushel the soybean loads are discounted; moisture, where grain moisture levels exceeding 13 percent are discounted by 0.7 or 0.8 percent for each half percent of moisture above 13 percent, and a $0.025 per bushel drying charge is levyed for each half point of moisture above 13 percent; foreign material where the weight of a soybean load is reduced to account for foreign material in the soybeans, reducing the gross weight for any foreign material above 1 percent with discounts ranging from $0.01 to $0.05 for each 1 percent of foreign material found; damage, where damage includes heat damage, frost damage, immature seed, mold damage, insect damage and sprout damage and 2 percent damaged beans are allowed before damage discounts apply the damage discounts range from $0.02 to $0.05 for each 1 percent above 2 percent; splits, where soybeans are counted as splits when a quarter of the seed is missing, up to 20 percent splits are allowed without discount, the discount for splits ranges from $0.01 to $0.05 for each 5 percent increase in split beans, and the discount typically increases as the percentage of splits in the sample increases. A soybean sample might have the following characteristics: 55 pound bushel weight, 13 percent moisture, 1 percent foreign material; 2 percent damage; 10 percent splits. So it is apparent that schedules for soybean discounts are detailed and well developed for most discount factors. The schedules, however, do not include details for discounts for protein levels. A notional schedule of the details of disounts for protein levels for Manitoba-sourced soybeans is being prepared as a central presentation point of this report.

Low protein levels can be problematic in Manitoba. Base soybean meal is sold with a 47.5% guarantee. Dry soybeans (12% moisture) need to be no less than 40% protein to meet the guarantee, or they are subject to discounts. Furthermore, at 37.2% protein, Manitoba and Saskatchewan soybeans do not meet the minimum levels necessary for meeting quality specs for soybean meal. Discounts of $6 per tonne for soybeans with under 33 percent have been reported in Manitoba and discounts of $9 per tonne have been reported in Manitoba for soybeans with under 32.4 percent protein. Soybeans falling under 32 percent protein can face rejection. These discounts have yet to be detailed in a schedule. Soybean buyers are being polled to determine a range of discounts for soybeans and whether the discounts are consistent across years and regions.

There has been a general migration of soybean production from the more southern US states to the more nothern US states and now in to Manitoba and Saskatchewan. Then tendency has been for soybean protein levels to fall as production moves northward so the questions is whether soybean protein levels relate mostly to climate and heat.

*Outline project activities, preliminary results, any deviations from the original project and communication activities. You may include graphs/tables/pictures in the Appendix*.

***tAPPENDIX***

Include up to 1 page of tables, graphs, pictures.

Soybean Protein Levels in % by Province1

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 20172 |
| MB | 37.7 | 37.8 | 37.3 | 36.5 | 36.3 | 39.7 | 37.2 | 38.0 |  | 37.4 |
| SK | 33.8 | 36.3 | 38.1 | 40.1 | 38.1 | 39.6 | 37.6 | 38.4 |  | 36.0 |
| ON | 40.7 | 40.2 | 40.8 | 38.3 | 39.9 | 40.4 | 41.0 | 39.8 |  | 39.4 |
| QC | 41.3 | 41.1 | 41.1 | 40.9 | 40.8 | 41.3 | 40.1 | 41.1 |  | 40.3 |

1CGC Quality of Canadian oilseed-type soybeans

2 https://www.grainscanada.gc.ca/soybeans-soja/harvest-recolte/2017/oil-oléagineux/hqso17-qrso17-03-en.html

Soybean Protein Levels by Latitude: Further north lower protein1

|  |  |
| --- | --- |
| Lower Protein | North Dakota, South Dakota, Nebraska, Minnesota, Iowa |
| Medium Protein | Wisconsin, Illinois, Missouri, Kasas |
| Higher Protein | Michigan, Illinois, Indiana, Missouri, Kansas, Oaklahoma, Arkansaw,  |

1USSEC Soybean Quality Survey 2009