



## Wheatland Conservation Area Inc.

P.O. Box 2015, Swift Current, Saskatchewan. S9H 4M7

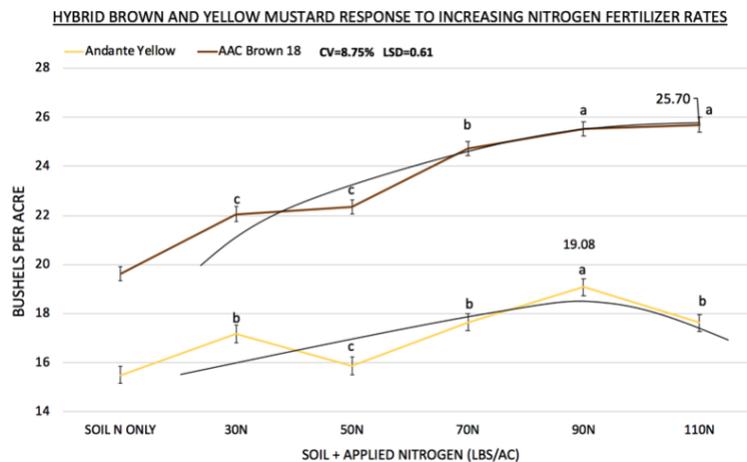
Ph. # (306) 773-4775

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### Demonstrating Nitrogen Fertilizer Responses in Yellow and Brown Mustard

The objective of this project is to demonstrate to producers' optimum fertility management practices in yellow and brown mustard, by varying nitrogen fertilizer rates and to promote the findings of Dr. Ross McKenzie that dismiss the myth that mustard does not respond to inputs as well as other crops. This project is relevant to producers in numerous ways with the hybrid brown mustard pre-launch in 2019. Preventing both under and over application of nutrients will benefit producers financially and environmentally. Since the traditional way of thinking suggests a mustard crop requires fewer inputs, there may be a tendency to under apply resulting in lower yields and less profits. By establishing a nitrogen response curve for mustard crops in SW Saskatchewan, similar to that recently established by Dr. McKenzie in Lethbridge, area producers can target optimal application rates.

Similar to last growing season, accumulative precipitation was well below the mean and moisture deficient conditions caused major crop stress resulting in poor development, yield and treatment response. Both Andante yellow and the new Brown Mustard Hybrid (AAC Brown 18) responded positively to increasing applications of total nitrogen fertilizer with hybrid brown showing a stronger response. The highest yielding brown mustard treatment resulted from 110# of N



(25.7 bu/ac) but was not significantly higher than the next best yield (25.5 bu/ac) resulting from 90# of N. Yield positively increased with nitrogen rate, signifying an obvious response to fertilizer inputs. The optimum treatment for yellow mustard in terms of yield was also 90# of N (19.08 bu/ac). Keeping in mind, this may not be the most economical based on your operation input costs. The highest nitrogen rate applied to yellow mustard may not have responded as strong this particular year due to low stored soil moisture in the spring and relatively high amounts of nitrogen remaining in the soil from 2017. As moisture increases, the need for nitrogen fertilizer increases, therefore 90# of N was adequate for mustard this particular year. If growing season precipitation had been increased, 110# of N may have resulted in significantly higher yields than all other treatments. This reiterates the fact that mustard has a high response to nitrogen fertilizer inputs and producers can use the optimum rate for maximum yield increases to benefit them financially and environmentally by avoiding under applying nutrients that leaves them with less yield and less profit. This project was featured at Wheatland Conservation Area's Annual Field Tour in 2018 and the Crop Production Show in 2019 at the Agri-ARM research update, as well as the Mustard Growers Annual General Meeting.

### Acknowledgements

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