

Adaptation of Oilseeds in Saskatchewan

William May, Yantai Gan, Stew Brandt, Randy Kutcher and Guy Lafond
Indian Head Research Farm, Agriculture and Agri-Food Canada, Indian Head,
Saskatchewan S0G 2K0

Canola quality *Brassica juncea*, and sunflowers are oilseed crops that can be grown in western Canada. Canola quality *Brassica juncea* is a new crop and modern hybrid sunflowers have replaced the open pollinated type of sunflowers largely used in past research. If producers are to grow these oilseed crops they need information on the adaptation of these oilseed. Currently there is very limited information comparing the economics of canola quality *Brassica juncea*, and sunflowers to established oilseed crops, canola and flax across soil-climatic zones using current production practices. Differences in response to nitrogen fertilizer will affect the economics of these crops. The economics and nitrogen response of flax and canola in western Canada are relatively well known, but much less is known about the economics and nitrogen response of canola quality *Brassica juncea*, and sunflowers. The introduction of canola quality *Brassica juncea* has opened up the potential for an increase in the production of canola quality oilseed crops in the dryer areas of the province and other harvest management options like straight harvesting. Due to its blackleg resistance and increased shattering resistance it may also be grown in the wetter areas of the province. Sunflower is also adapted to dryer areas of the province and the early short stature sunflowers are adapted to the wetter areas of the province.

The objectives of this research are:

- 1) To compare the adaptation and economic returns across soil-climatic zones of *Brassica juncea* quality canola and sunflowers to the major oilseed crops in western Canada, canola and flax.
- 2) To compare the nitrogen response curves of *Brassica juncea* with quality canola and sunflowers to the current major oilseed crops in western Canada, canola and flax, across soil-climatic zones.
- 3) To compare the effects of the oilseed crops, canola, flax, *Brassica juncea* quality canola and sunflower, on a cereal crop grown in the following year across soil-climatic zones.

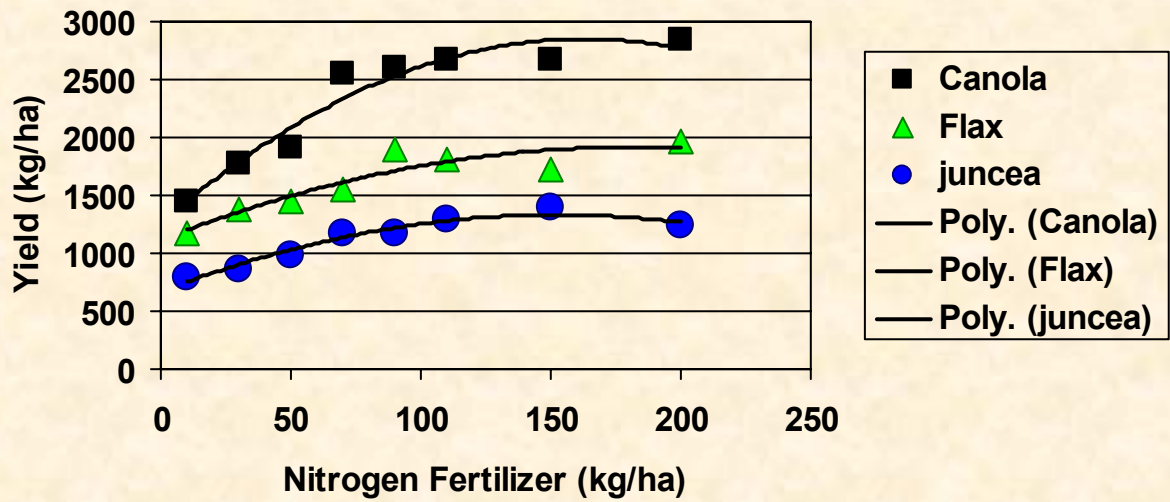
Preliminary Conclusions

In the wet years that have been experienced at most locations in 2004 and 2005 *Brassica juncea* and sunflowers have struggled to reach the yield levels achieved by canola and flax except at for sunflower at Swift Current. The canola tends to be the highest yielding at each site but some economics have to be applied due to the differences in cost of growing each crop. Hopefully some of the locations will have dryer conditions in 2006 to better reflect the environment of Saskatchewan.

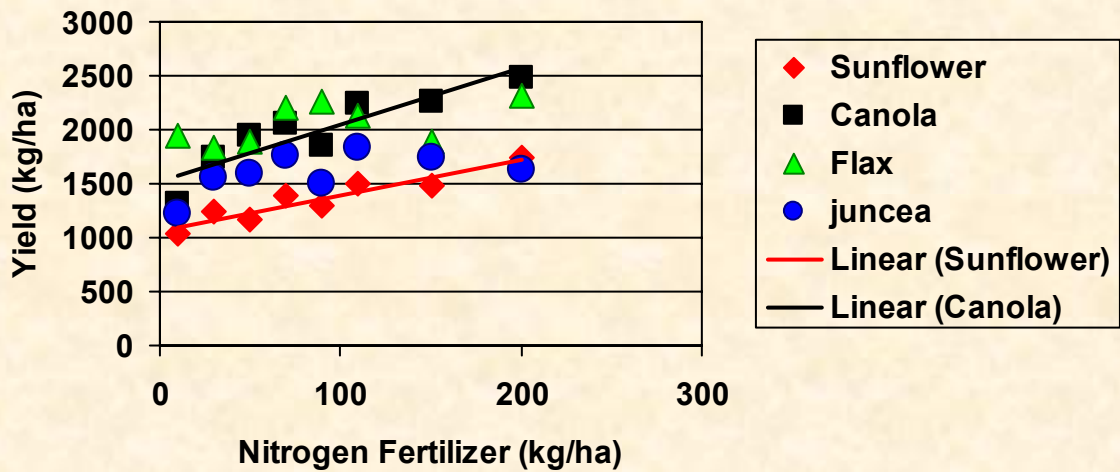
Experimental Protocol

- **4 crops**
 - Canola quality *Brassica juncea*
 - Sunflower
 - Canola
 - Flax
- **5 Locations**
 - Indian Head
 - Swift Current
 - Scott
 - Melfort
- **8 nitrogen rates**
 - 10 kg/ha
 - 30
 - 50
 - 70
 - 90
 - 110
 - 150

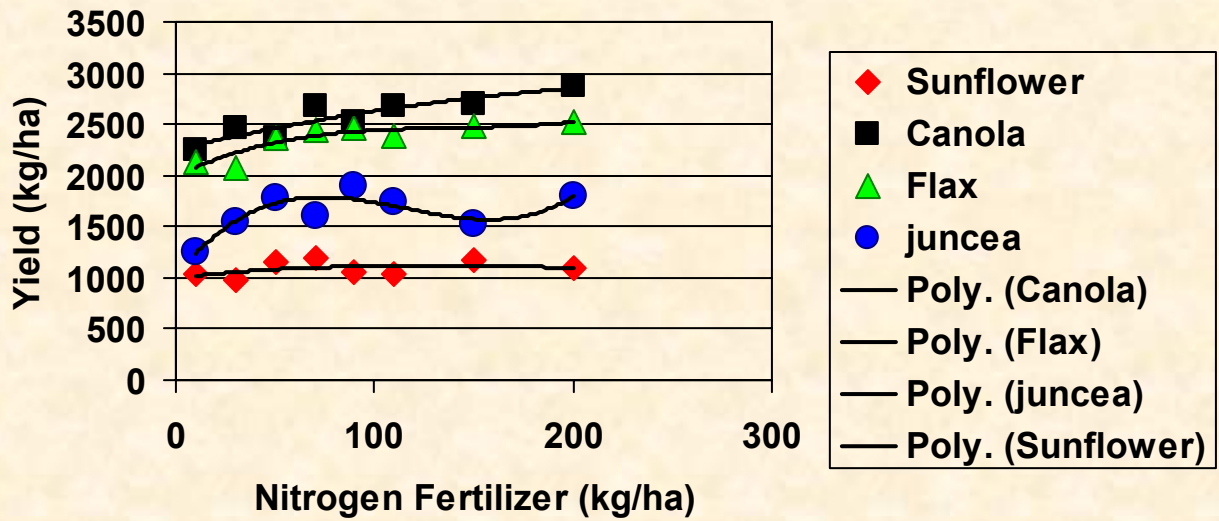
Oilseed Response to N at Indian Head in 2004



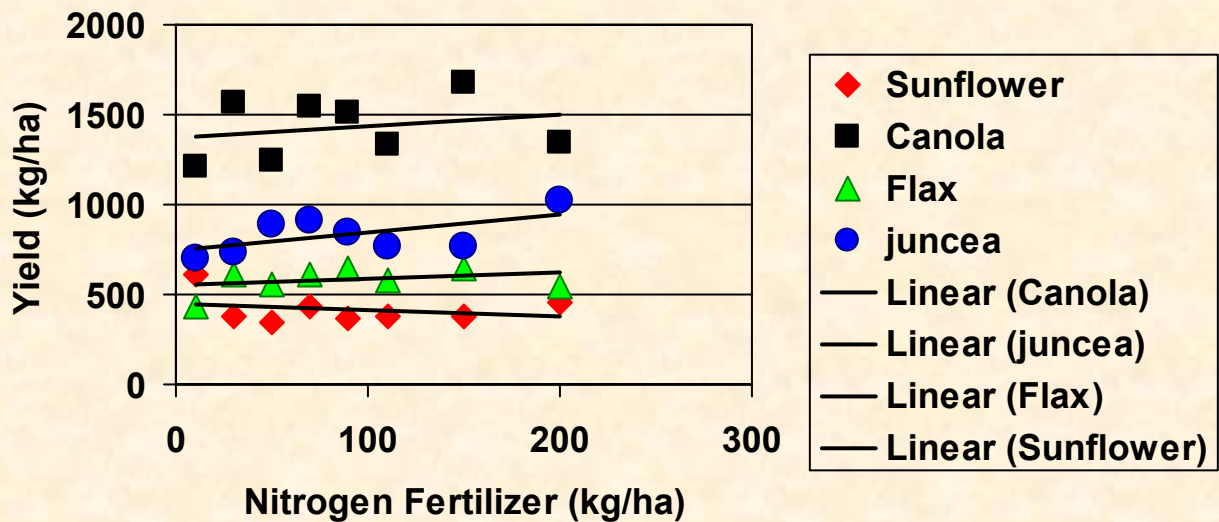
Oilseed Response to N at Indian Head in 2005



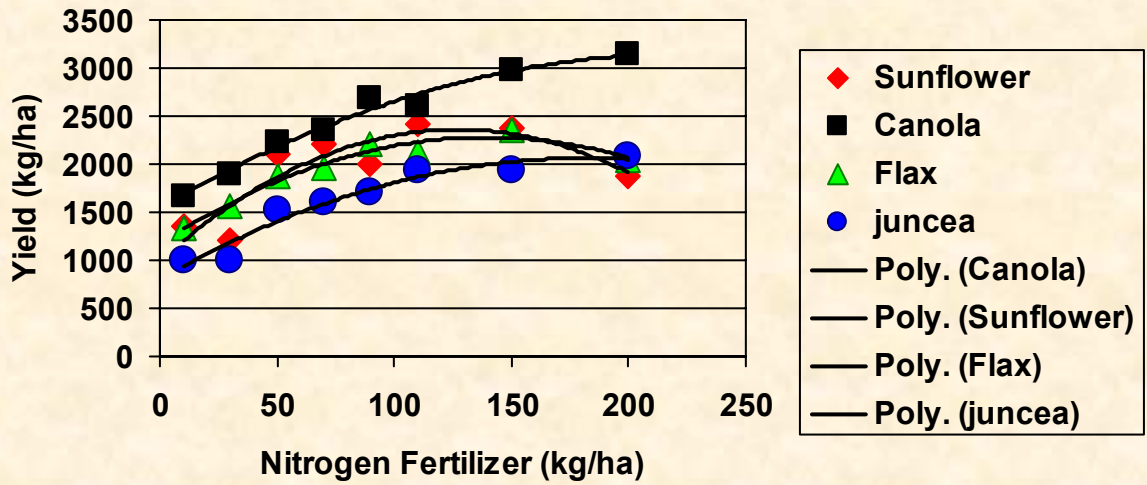
Oilseed Response to N at Melfort in 2004



Oilseed Response to N at Scott in 2004



Oilseed Response to N at Swift Current in 2004



Oilseed Response to N at Swift Current in 2005

