



Good Value from Certified Hybrid Canola Seed

Many producers use farm saved seed to achieve significant cost savings against the purchase of Certified seed. This practice is common for a number of open-pollinated crops, ranging from wheat to field peas. The situation is more complicated for canola, where producers can choose to grow open-pollinated or hybrid and hybrid-synthetic types.

Hybrid canola is quickly gaining on traditional open-pollinated varieties. In Canada, the total canola acreage planted to hybrids has more than doubled since 2000. The demand for canola hybrids is expected to climb because of the yield and quality advantages that hybridization affords. Open-pollinated varieties, which now account for roughly 60% of Canada's canola crop, produce seed that is genetically very similar to the parent plants. A hybrid variety is bred by crossing two dissimilar lines of canola. The resulting seed, or F1 generation, receives 50% of its genes from the male parent and 50% from the female parent.

Controlled cross pollination of two distinctly different lines will produce a hybrid (F1 seed) that exhibits a marked improvement in performance over either parent. This rapid increase in productive capabilities – yield as well as disease and herbicide resistance, appropriate maturity, low green seed content, lodging tolerance, and oil and meal quality – is the result of hybrid vigour. However, seed from the next generation (F2 or farm saved seed) and subsequent ones is not hybrid, and it will not have the vigour of the original Certified hybrid canola and may have lost some useful traits.

Most of Canada's canola crop is produced using Certified seed. With rising input costs, some producers are tempted to save and replant seed (farm saved seed) grown from a hybrid variety. A recent survey of canola varieties suggested that at least 7% of canola acres in western Canada may have been sown to farm saved seed. Agriculture and Agri-Food Canada agronomists at Scott, Saskatchewan, and Lacombe, Alberta, are now investigating the impact of using farm saved seed from a hybrid canola to grow a succeeding crop. Although the loss of hybrid vigour in the F2 generation is well documented, the researchers aim to quantify the economic risks that producers may face by sowing farm saved seed. These studies were initiated last year in collaboration with the Saskatchewan and Alberta Canola Development Commissions.

Limited findings to date support the use of Certified hybrid canola seed. Higher yields were consistently produced by sowing Certified hybrid seed rather than seed saved from a hybrid crop. The value of higher yields exceeded the increased cost of purchasing Certified hybrid seed, often by a very wide margin. The performance of farm saved seed was not improved by increasing seeding rates or selecting only large seed to plant.

Results from the 2004 growing season are preliminary and provided some initial insight into the issue. They are not sufficient to draw conclusions as future responses may differ. Performance of canola grown from farm saved seed of the **open pollinated** variety was very similar to that grown from Certified seed. Oil and glucosinolate content of canola grown from Certified and farm saved seed was similar as well. This was expected since open pollinated varieties are bred to produce progeny that is genetically very similar to the parent plant. Thus, if germination and vigor of farm saved seed from an open pollinated cultivar is equal to Certified seed of the same cultivar, it should perform similarly. The situation with the **hybrid** was quite different. Certified hybrid always yielded significantly more than where farm saved F2 from hybrid plants was used. The yield advantage of Certified hybrid over farm saved F2 from hybrid plants was always greater than any potential cost savings associated with farm saved seed. Increasing seed rate was not beneficial except in the weedy trial at Scott, where both Certified and farm saved yielded more at the high seed rate.

Initial indications from 2005 are that Certified hybrid seed yielded 13% higher on average than Helix treated F2 seed grown from harvested hybrid plants. In the seed treatment trials, canola yield from Certified + Helix was 4-12 bu/ac [8-47%] more than canola yield from F2 + other seed treatments. **Growers should be cautioned that farm saved F2 seed from hybrid plants is not the same as the parent hybrid and yield and quality can be affected if F2 seed is used.**

No benefit from using larger seed was noted for any seed lot. This probably reflects the very high quality of the Certified and farm saved seed lots used in the trials. All had 90% or higher germination rates and 1000 seed weights exceeding 3 grams. Seed treatment had little impact on performance of any of the seed lots likely because fleabeetle and seedling disease pressure was low. An overall summary of this work will be available in late winter 2006.

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