



## Fertility Requirements for Hybrid versus Open-Pollinated Canola

When debating between a hybrid or an open-pollinated (OP) canola variety, it is important to consider numerous agronomic factors including each types' response to nitrogen (N).

In general, the yield advantage of hybrids increases with greater input of N. Hybrids on average require 30 lbs/ac more N than Open Pollinated (OP) varieties to optimize their yield potential. This being the case, choosing a good OP like CANTERRA 1818RR could be a cost effective strategy insofar as nitrogen inputs are limiting or reduced (~ 40-60 lbs/ac range). Although an OP might not be able to do as much as a hybrid with the same amount of N, the return on investment can be higher if canola production is managed at a lower fertility regime due to the cost savings in seed.

However, when managing canola at higher fertility levels, the **benefit derived from hybrid genetics far outweighs any cost savings associated with an OP variety**. As seen by the response curves on the next page, the yield advantage of a hybrid is just getting started where OP yields peak (~120 lbs/acre range). As the curve shows, OP yield begins to *decline* with more inputs of N (~ 160 lbs/acre range).

Adding more inputs to encourage yield is not necessarily true for other nutrients such as phosphate (P) and sulphur (S). Although some experts have recommended a specific ratio of N and S to increase yield potential, studies suggest that once any sulphur and/or phosphate deficiencies in the field are corrected, there is no additional benefit for P or S beyond the required base amount of these nutrients, which is the same for both hybrid and conventional varieties<sup>1</sup>.

The decision to go with a hybrid or an OP will depend on budgetary considerations AND field conditions. When budgetary considerations are more relaxed, and elevating the fertility level (N) of the field is not an issue, a hybrid is the most cost effective choice since its superior genetic potential can be fully harnessed.

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<sup>1</sup> R.E. Karamanos, T.B. Goh and D.P. Poisson, 2005. Nitrogen, Phosphorous, and Sulfur Fertilization of Hybrid Canola. Journal of Plant Nutrition, 28, 1145-1161

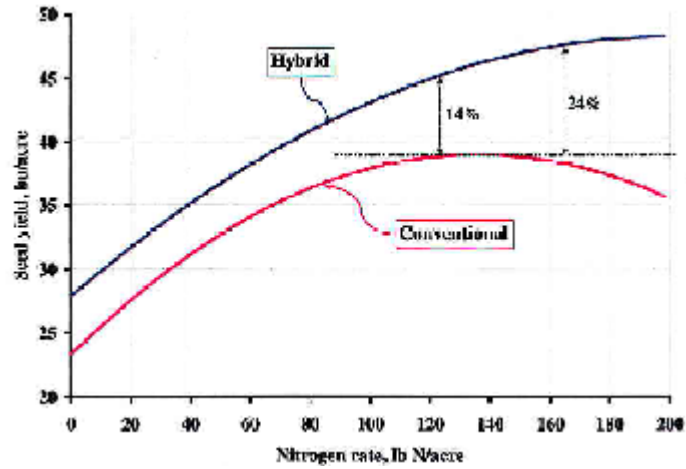


Figure 1: Comparison of relative yield of canola hybrids to that of conventional canola cultivars based on soil + applied N. (Westco 17 site years; 1999-2001. Source: Rigas Karamanos)