

# #160

## Western Australian seed options in rapeseed: prerequisites and economic implications

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PLENARY TALKS

In Western Australia, canola is predominantly comprised of a mix of hybrid Genetically Modified (GM) varieties, hybrid Triazine Tolerant (TT) varieties and open pollinated TT varieties. Western Australian canola production has increased from 0.4mmt in 2006 to more than 1.5mmt in 2018. There has been increased sowing in traditional high rainfall canola areas as well as expansion into the medium (450-325mm) and low rainfall areas (<325mm). The rapid growth in production has been driven by advances in plant breeding and agronomy and the release of Roundup Ready® canola, a genetically modified (GM) type.

There was an extensive field trial program from 2013-2018, comparing yields, profitability and agronomy of GM, open pollinated and hybrid canola. The results are presented for each canola type, including the optimal plant density, seed size, seed depth and nitrogen rates. Hybrids had higher yields, although there was little difference when yields were less than 1t/ha. Hybrids had better field establishment but this was often explained by larger seed size. The optimal crop density was largely dictated by seed cost so was significantly lower for hybrid types, compared with open pollinated varieties.

We also detail the crop system where each type is best suited and outline advantages and disadvantages. Open pollinated TT varieties remain the backbone of canola production in Western Australia, covering approximately 80% of the sown area. This is a low cost, flexible system with good control of (triazine susceptible) wild radish. It is less suited to paddocks with a high weed burden and is reliant on good moisture for effective weed control.

RR varieties are tolerant of glyphosate and produced by genetic modification (GM). They provide reliable and effective broad spectrum weed control. They are particularly common in the Northern regions where triazine resistant wild radish and dry sowing is common. However, RR canola has high seed costs and is a lower value crop, due to the discounting of GM grain.

Hybrid TT seed is expensive and the relative profitability depends on the yield potential of the site. The yield threshold is given for equal profit of hybrid TT canola, compared with open pollinated TT varieties.

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