

Trends in canola breeding in Australia

A success story

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The Australian canola industry has continued to expand over recent years, despite a series of relatively unfavourable seasons. In 2012, Australia sowed 2.4 million ha of canola with an average yield of 1.3t/ha. Canola area will fluctuate depending on pre-season rainfall and grain prices. However canola remains a crucial component of crop rotation in Australia.

Breeding of new canola cultivars in Australia is now the responsibility of the private breeding companies. Public funded breeders have the responsibility to identify and develop germplasm with new traits of interest for the private breeders. Current priorities include new sources of blackleg resistance (both major and minor genes), drought tolerance/water use efficiency, heat tolerance and to a lesser extent, enhanced quality characteristics.

There has been a major swing toward the development of hybrid cultivars over the past 5-10 years. Approximately 50% of Australian cultivars are now hybrids and this figure is increasing each year. There is still interest from growers for new open pollinated cultivars, however this is a lower priority for seed companies.

Herbicide tolerance is essential in the vast majority of Australian canola growing areas. Both triazine and Clearfield tolerance have been widely used over many years. In the last 3 years, we have seen the introduction and increasing use of the genetically modified Round Up Ready herbicide tolerance. Currently, approximately 50-55% of the crop is triazine tolerant, 15-20% is Clearfield, 10-15% is RoundUp Ready and about 10 % is conventional (no herbicide tolerance).

High stability oil types (high oleic acid and low linolenic acid) have also become increasingly important over recent years. These higher stability oils are beneficial for deep frying and other applications. Australia currently has two established high stability programs, with a third in the development stage.

Canola quality *B. juncea* has higher heat and drought tolerance and has been specifically developed in Australia for low rainfall, higher temperature environments. While still in a relatively early stage of commercialisation, it has shown considerable promise. As with *B. napus*, herbicide tolerance is crucial to its success.