



GM CANOLA – FACT NOT FICTION

GM canola is currently a topic of much discussion in Western Australia, following the announcement by the WA Government on 25 January to allow GM canola in the State from 2010. The following provides a summary of factual information on GM canola.

Safe history of use

- GM crops are not new. GM crops, including GM canola, have been grown, traded and consumed around the world for 14 years.
- In 2009, 134 million hectares of GM crops were planted by 14 million farmers in 25 countries (See <http://www.isaaa.org/resources/publications/briefs/41/default.asp>).
- Australia was one of the first countries in the world to adopt GM crops – planting GM cotton in 1996. Australian cotton growers have chosen to utilise GM varieties, which now account for over 90 per cent of the Australian cotton industry.
- Major GM crops, ingredients of which are in our food supply, include soybean, corn, cotton and canola. In 2009, more than three quarters (77 per cent) of the 90 million hectares of soybean grown around the world were GM. In addition to being used in food products, Australia imports considerable GM soy for animal feed.

GM canola – 14 years of experience

- GM canola was approved in Canada for planting in 1996. It now accounts for 21 per cent of the 31 million hectares of canola planted in the world.
- GM canola now accounts for over 90 per cent of the canola grown in Canada (Australia's major competitor). A survey of Canadian growers noted that growers chose to grow GM varieties for easier and better weed control, better yields and reduced costs.
- GM canola was approved for consumption in Australia in 2000 by the Federal food regulator, Food Standards Australia New Zealand (FSANZ). In 2003, the Office of the Gene Technology Regulator (OGTR) approved GM canola for planting in Australia noting that GM canola was "as safe to human health, safety and the environment as non-GM canola".
- The 210-page detailed OGTR assessment of GM canola – covering toxicology (mammals, birds, wildlife, fish, insects, microbes and soil biota) allergenicity, weediness, gene transfer, herbicide resistance, and international approvals – can be found at: [http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/dir020-3/\\$FILE/dir020finalrarm.pdf](http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/dir020-3/$FILE/dir020finalrarm.pdf)
- In December 2006, Australia actually imported GM canola from Canada due to the drought as we did not have sufficient supplies to meet domestic needs.
- In 2008, growers in New South Wales and Victoria grew GM canola for the first time. In 2009 the uptake of GM canola increased four-fold, with 308 growers planting 41,000 hectares.
- 15 different types of GM canola have been approved for planting and import, including in Europe.

Coexistence, choice and stewardship

- GM and non-GM crops can coexist. The USA, Canada, Brazil and Argentina are some of the biggest GM crop adopters in the world. Canada grew 8.2 million hectares of GM crops in 2009, while Brazil grew 21.4 million hectares and Argentina grew 21.3 million hectares. At the same time these countries grow considerable organic crops. A 2007 report noted that "the market for organic food in Canada is growing at 15-20 percent per year". In March 2009, Brazil's Agriculture Minister noted that "Brazil currently ranks as the world's second largest organic producer" and a CSIRO study noted that Argentina has "the second highest amount of land under organic production in the world".
- The Australian grains industry issued a statement in 2007 entitled "Delivery Market Choice with GM canola". This statement, supported by 29 agriculture organisations, noted that the industry has the protocols and processes in place to manage GM canola and meet market requirements. The statement can be found at: http://www.afa.com.au/pdf/Delivering_Market_Choice_with_GM_canola.pdf. A more detailed 101-

page document, detailing supply chain management processes can be found at:

http://www.afa.com.au/pdf/Delivering_Market_Choice_with_GM_canola.pdf

- In 2009, grain marketers Graincorp (east coast) and CBH (Western Australia) reported that all of the canola delivered at harvest met market requirements, demonstrating the industry's ability to manage GM canola and deliver choice. (See www.agric.wa.gov.au/objtwr/imported_assets/content/fcp/gmcrops/gm%20canola%20report%2021jan-web.pdf)
- Australian agriculture is committed to the stewardship of GM crops. Many experts are involved in the development of stewardship plans, including scientists from a range of disciplines and industry personnel with different expertise, including agronomists and grain technicians. All GM canola growers must complete an accreditation course prior to receiving GM canola seed. They must also sign a licence and stewardship agreement which details the steps they must take when growing, harvesting and delivery their crop. For example on-farm activities include discussing plans with neighbours, management plans, paddock assessments, record keeping, inspections, audits, compliance and crop agronomy. The 2010 GM canola crop management plan can be found at: http://www.monsanto.com.au/_pdfs/rrc_cmp.pdf

The main GM players – public + private = competition

- In Australia, the majority of GM research is undertaken by public research agencies – including CSIRO, universities, Cooperative Research Centres and departments of agriculture.
- The following is a snapshot of some of the most advanced Australian research:
 - ◆ GM pasture – The Victorian Department of Primary Industry has three OGTR field trial licences for white clover, perennial ryegrass and tall fescue
 - ◆ GM wheat – CSIRO has two OGTR field trial licences for altered grain and altered starch (wheat and barley). The Victorian DPI has one licence for drought tolerance, and Adelaide University has one OGTR licence for environmental stress.
 - ◆ GM sugarcane – BSES has three OGTR field trial licences for herbicide tolerance, altered plant growth, enhanced drought tolerance, enhanced nitrogen use efficiency, altered sucrose accumulation, and altered plant architecture. The University of Queensland has two licences.
- International life sciences companies invest in, and partner with, Australian research organisations. In 2009 a number of new research alliances were announced involving Australian research organisations. DuPont announced in November a research, development and commercialisation alliance with BSES in Brisbane, to “improve productivity and use of sugarcane varieties”. Dow Agrosciences and the Victorian DPI announced an alliance in May for the development of “new plant traits and plant varieties”. While in July, Bayer CropScience announced an alliance with CSIRO to work on seed and traits in cereals. These alliances allow researchers to access technologies for incorporation into Australian plant varieties, thus delivering improved crops to Australian agriculture.
- Monsanto has been actively engaged in Australia in both the cotton and canola industries. An Australian cotton industry leader has noted, “The success of the Australian cotton industry and the recognition that Australian cotton varieties are the highest yielding in the world coupled to high quality has arisen by the close cooperation and shared vision of the needs of the industry especially with regard cotton varieties and their traits. By bringing major crop biotechnology companies into a valued arrangement with CSIRO and CSD the Australian cotton growers have been able to take a lead over their many and significant competitors as well as achieving greater social and environmental benefits in their producing regions”. (David Anthony, CEO Auscott and Chairman Cotton Communities CRC, via personal communication).
- In Australia, farmers cannot buy GM canola seed from Monsanto. Monsanto has licenced its technology to four seed companies – Nuseed, Pacific Seeds, Pioneer and Canola Breeders of WA – thus providing competition and choice for growers.
- Monsanto is not the only GM canola player in Australia. Bayer CropScience gained regulatory approval for its GM canola (“Liberty Link”) from the OGTR in 2003, although this has not been commercially grown to date. In addition, the Victorian DPI has recently applied to the OGTR for a field trial licence to trial GM canola with “enhanced yield and delayed leaf senescence”.

Why GM – and why GM canola?

- Gene technology is not a magic bullet but it is a very valuable plant breeding tool.
- In Australia, three universities have assessed the potential for GM canola in the Australian farming system. The findings are as follows:
 - ◆ Charles Sturt University - “GM canola delivered superior weed control, higher yields and oil quality and better profits when compared to current common canola varieties grown under conventional weed management systems.” (five-year study completed in 2007)

- ◆ Melbourne University - "An extra 225,000 hectares of canola could be grown using conservation farming practices; 640 tonnes less triazine herbicide would be used per annum; average canola yields would increase from 1.17tonnes per hectare to 1.28 tonnes per hectare – with an increase in production of 295,000 tonnes per annum; wheat production would increase by 64,000 tonnes on the additional canola area." (2007)
- ◆ Curtin University - "Our analysis found that the profitability of GM canola was equal or superior to other systems of canola. We also found that the estimated environmental impact of GM canola was less than half of that of triazine tolerant canola – currently the most widely used system in WA." (2010)
- Growers in New South Wales and Victoria in 2008 and 2009 reported that GM canola delivered superior weed control and enhanced yields. (See <http://www.grdc.com.au/uploads/documents/GM%20Canola%20Roundup%20Ready.pdf>)
- In Western Australia, 600 individuals (growers, agronomists, advisors etc) have completed a GM canola accreditation course and 300 farmers have signed a licence and stewardship agreement, ready to plant GM canola in 2010. In New South Wales and Victoria over 1500 people are accredited and it is estimated that between 70,000 to 90,000 hectares of GM canola will be planted this year.