

Submission Cover Sheet

Review of the Moratorium on GM Canola

Submission Number: 73

Name of Individual/Organisation: David Tribe

Date Received: 17 August 2007

Number of Pages: 3

Attachments Submitted with this Submission:

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Professor Nossal and respected colleagues.

RE Possible extension of State GM crop moratorium may I briefly address just two major points:

1. Practical demonstration that rapeseed crop can be segregated.
2. Economic costs of the moratorium extend throughout the Crop R and D pipeline.

Point 2 explains why the sum total of GM moratorium's costs is a drawn out economic hangover extending years after the moratorium is eventually lifted.

Practical demonstration that rapeseed crop can be segregated.

Currently, capture of the economic benefits of GM technology by any growers who chose to use the technology is prevented by the state moratorium.

A key step to allowing both non-GM and GM alternatives choice to capture benefits is acceptable tolerance levels for adventitious presence, and a value chain organised for crop segregation and identity preservation. Other submission will surely describe the steps in the value chain and stake-holder arrangements that will ensure the Victorian grain Industry will provide canola variety segregation.

Here I want to document an overseas example proving this can work.

There is a proven track record for successful rapeseed canola crop segregation with existing farming systems.

A toxic canola forerunner now generally called HEAR rapeseed provide an example of successful overseas coexistence and segregation of two varieties of rapeseed (canola) - one HEAR and the other non-toxic food grade rapeseed (canola).

A freely available report, Graham Brookes & Peter Barfoot, PG Economics Ltd Dorchester, UK 24 November 2003, Co-existence of GM and non GM arable crops: case study of the UK (http://www.pgeconomics.co.uk/pdf/Co-existence_UK.pdf) documents fully the successful coexistence of toxic and food grade rapeseed (we call this canola) in Europe.

Note that significant hectares of HEAR rapeseed varieties are grown in Europe. 34,000 ha in 1998.

(Europe Interactive European Network for Industrial Crops and their Applications, <http://www.ienica.net/>)

Sections of the 2003 report below describe how this is achieved in detail:

"UK arable farmers have been successfully growing specialist crops (eg, seed production, high erucic acid oilseed rape) for many years, near to other crops of the same species, without compromising the high purity levels required..."

3.3 High erucic acid oilseed rape (HEAR)

Are there any co-existence conditions or recommendations for farmers planting HEAR?

HEAR varieties have desirable properties for the manufacture of industrial oils (it is used to produce erucamide which is mainly used as a 'slip additive' in polythene and polypropylene film and as a hair conditioner). However, the erucic acid is an anti-

nutritional product and should not be consumed on health and safety grounds. It is therefore most important that the cultivation of HEAR crops do not contaminate other oilseed rape (often referred to as double zero varieties) grown for uses in human food and animal feed. HEAR crops are grown on contract to processors with contracts recognising that there may be adventitious presence of non erucic oilseed rape in deliveries via the establishment of maximum thresholds for the presence of non erucic oilseed rape material. The contracts also usually require that only certified seed is used, seed drills have been cleaned prior to use, a separation distance of 50 metres is maintained from other oilseed rape crops sown in the same season, all cultivation and harvesting equipment are cleaned before use and post harvest segregation is maintained to minimise admixtures. Prevention of cross contamination is promoted by contract testing and the use of penalties (including rejection of crops) if the set parameters for the oilseed fatty acid content are not met. The threshold for admixture of HEAR in other (double zero) oilseed rape is 2%¹¹. HEAR varieties typically contain about 50% erucic acid content.

Adherence to the 50 metre separation distance is also a condition for eligibility to receive area payments under the EU's arable area payment scheme.

Relevance of condition/recommendations

Adherence to the contractual requirements and in particular the separation distances, comes (where applicable) by voluntary arrangements between adjacent farmers, although in many instances there is no need to involve other farmers, as separation distances can be adequately dealt with on-farm (eg, 50 metres is less than the width of an average field). Farmers growing HEAR usually discuss cropping plans with their neighbours, identify and set rotation patterns by mutual agreement.

Evidence from Germany (JRC study) suggests that a 100 metre separation distance (the separation distance typically required in Germany) delivers more than 95% of double zero seed lots with a erucic acid level of below 0.2% and only a few seed lots contain more than 0.5%. Research conducted in the UK by Kings¹² in 1993-95 which planted HEAR varieties in plots adjacent to double zero varieties (maximum distance between plots was 9 metres) found that the level of erucic acid found in double zero crops was less than 0.5%.

(END OF DIRECT QUOTE from Graham Brookes & Peter Barfoot 2003)

Economic costs of the moratorium extend throughout the Crop R and D pipeline.

Extension of the Victorian GM moratorium beyond 2008 will have substantial opportunity costs whose scope is not fully appreciated by those unfamiliar with the drawn out challenge of Agricultural biotech R and D - with its development pipeline straddling a decade in time.

The opportunity costs of an extension to the moratorium start with disincentives for talented new biological scientists to enter agriculture.

Talented human capital is driven away from plant science training by the depressing uncertainty that success will never be rewarded.

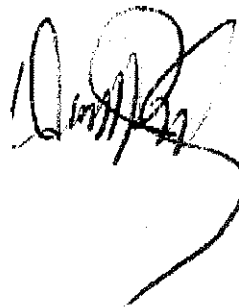
These opportunity costs include research group disintegration such as dismantlement of Monsanto company supported Dryland breeding research at Horsham, Victoria. They include lack of new GM canola varieties entering the early stages of crop improvement. They include loss of benefits from existing GM varieties as they become obsolete due to general variety improvement by ongoing conventional breeding.

They include cessation of field trials with new varieties carrying GM traits. There is lack of investment by private companies on GM research.

Learning by experience - such finding the ways particular GM varieties are suited to local conditions - comes to a halt as there is no opportunity for farmers to learn by experience. Research on new traits for canola - such as drought resistance and salt tolerance - comes to a halt. GM research on other crops is not commenced.

The sum total of these costs is a drawn out economic hangover extending years after the moratorium is eventually lifted, as new varieties will not enter the pipeline until the moratorium is gone, and beyond 2008 the pipeline will be empty.

David Tribe Ph.D. Senior Lecturer in Microbial and Food biotechnology



17 August 2007

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