

Dear Editor,

Allergen-free GM ryegrass sweetener a bluff

For many years now the media has reported GM allergy free rye-grass as just a sneeze away.

Announced as a possibility more than a decade agoⁱ [1], the ABC reported LaTrobe Uni's German Spangenberg saying in 2003 that it was 5-6 years awayⁱⁱ [2], PhD student Natasha Petrovska saying in 2005 that it was at least 5 years awayⁱⁱⁱ [3], and John Brumby saying in 2006 that it should be available in about 6 years^{iv} [4].

When announcing the GM canola release in 2007 Premier Brumby cited The Age saying the research which would "take the hay-fever gene out of rye grass"^v [5]. THE hay-fever gene?

Perennial ryegrass pollen has at least 17 known allergenic proteins^{vi} [6], at least 4 of them regarded as 'major'. These proteins may be the products of 17 genes (give or take), and sufferers may react to some or all of them.

Even if a GM researcher were able to silence all 17 proteins with the exceptionally crude techniques available^{vii} [7], the plant is unlikely to produce seed^{viii} [8] and allergy sufferers would still get hay-fever from similar grasses^{ix} [9].

Most landholders would need incentive to fork out the expense of pasture redevelopment.

In June this year Sir Gus Nossal told the National Press Club that allergen free rye grass was 'coming down the research pipeline'^x [10], and the DPI website says low allergen rye-grass research is in the 'laboratory phase'^{xi} [11].

However, there are no allergen-silencing genes in the 'proof of concept' GM Rye trials taking place near Hamilton and the plants have to be removed before they flower^{xii} [12].

In November 2005 Spangenberg and Petrovska reported US field trials to investigate the effects on pollen dispersal of one down-regulated 'group 1' pollen allergen (Lol p 1) in Italian ryegrass^{xiii} [13]^{xiv} [14].

Why pollen dispersal and why just one allergen? A similar 'group 1' protein in maize^{xv} [15] has been shown to play a role in reproduction^{xvi} [16], and it seems likely the researchers were investigating the use of this feature to limit the spread of a GM ryegrass weed.

This is not about allergen free ryegrass.

Madeleine Love,

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ARC Centre of Excellence for Integrative Legume Research, Melbourne School of Land and Environment University of Melbourne <http://www.landfood.unimelb.edu.au/research/Biotech/news.html>
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- iv[iv] [4] 'Gene-silenced' ryegrass cuts out hay fever; Posted Sun Aug 6, 2006 6:05pm AEST; <http://www.abc.net.au/news/stories/2006/08/06/1707520.htm> , Accessed 7/12/08
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- ix[ix] [9] Cross-reactivity of pollen allergens: impact on allergen immunotherapy; Richard W Weber, MD; *Annals of Allergy, Asthma and Immunology*, Volume 99, September 2007
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