

23 June 2017

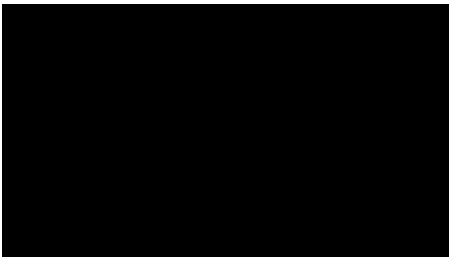
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Dear Sir/Madam

Attached are the comments that the New Zealand Food & Grocery Council wishes to present on the ***Call for Submissions – Application A1140 : Food derived from Herbicide-tolerant Canola Line MS11.***

Yours sincerely





***Call for Submissions – Application A1140 :
Food derived from Herbicide-tolerant
Canola Line MS11***

**Submission by the New Zealand Food & Grocery
Council**

23 June 2017

NEW ZEALAND FOOD & GROCERY COUNCIL

1. The New Zealand Food & Grocery Council (“NZFGC”) welcomes the opportunity to comment on the *Call for Submissions – Application A1140: Food derived from Herbicide-tolerant Canola Line MS11*.
2. NZFGC represents the major manufacturers and suppliers of food, beverage and grocery products in New Zealand. This sector generates over \$34 billion in the New Zealand domestic retail food, beverage and grocery products market, and over \$31 billion in export revenue from exports to 195 countries – some 72% of total merchandise exports. Food and beverage manufacturing is the largest manufacturing sector in New Zealand, representing 44% of total manufacturing income. Our members directly or indirectly employ more than 400,000 people – one in five of the workforce.

THE APPLICATION

3. Bayer CropScience has sought permission for food derived from canola line MS11. Canola line MS11 is genetically modified to provide tolerance to the broad spectrum herbicide glufosinate ammonium and expression of male sterility in the canola plant. Tolerance to glufosinate is achieved through expression of the enzyme commonly known as PAT. Male sterility is conferred by the *barnase* gene which, through several steps causes male sterility in the plant such that MS11 is unable to either self-pollinate or pollinate other plants. However, the female reproductive parts of the flower remain functional allowing for outcrossing with an agronomically-superior male line and thus restoring fertility in the seed sown by the farmer. The plants germinating from this seed therefore show hybrid vigour, as well as being able to self-pollinate and produce seed that is harvested for the food/feed market.
4. The safety of the PAT protein has previously been assessed by FSANZ in 22 separate applications such as in herbicide-tolerant cotton line DAS-81910-7 (PAT).

COMMENTS

5. The safety assessment of MS11 included several key elements. Detailed compositional analyses were conducted to establish the nutritional adequacy of seed from MS11 and to characterise any unintended compositional changes. FSANZ concluded that that seed from MS11, whether from unsprayed MS11 plants or plants sprayed, was compositionally equivalent to seed from conventional canola varieties.
6. In undertaking a characterisation of the transferred genetic material, FSANZ noted that the comprehensive molecular analyses indicated there was a single insertion site. This comprised a single, complete copy of each of the *bar*, *barnase* and *barstar* genes together with their regulatory elements. The introduced genetic elements were stably inherited from one generation to the next and no plasmid backbone had been incorporated into the transgenic locus.
7. Three expressed proteins by MS11 result (PAT, Barnase and Barstar) but were at or below the Limit of Quantification (LOQ). In considering the safety of the novel proteins, FSANZ noted that a large and diverse range of proteins are ingested as part of the normal human diet without any adverse effects, although a small number have the potential to impair health. In many cases, as noted above, insufficient amounts of the newly-expressed proteins could be obtained from the plant for safety evaluations. Nonetheless, alternative means of producing them was undertaken. The result was FSANZ found no concerns

regarding the potential toxicity or allergenicity of the expressed proteins of seed from MS11.

8. Previous safety assessments of PAT had indicated that the proteins would be rapidly degraded in the stomach following ingestion and would be inactivated by heating. Additionally, for all three proteins, bioinformatic studies confirmed the lack of any significant amino acid sequence similarity to known protein toxins or allergens; digestibility studies suggest the proteins would be rapidly degraded in the gastro-intestinal tract following ingestion; and thermolability studies indicate the three proteins are functionally inactivated following heating. In the case of MS11, FSANZ concluded that, overall, the PAT, Barnase and Barstar proteins would be degraded in a mammalian digestive system.
9. Taken together, the evidence indicated that should PAT, Barnase or Barstar be present in the diet they were unlikely to be toxic or allergenic in humans. The result was no potential public health and safety concerns being identified and food derived from MS11 out-crossed bred plants was therefore considered to be as safe for human consumption as food derived from conventional canola varieties.
10. We note that applications for approval of Canola Line MS11 have been made to relevant food authorities in Korea, Canada, USA, Taiwan and the EU over the past 12 months. No outcomes have yet been reported although the USA result must be close as the comment period on its proposal to accept the application closed on 12 May 2017.
11. NZFGC supports choice in the market place and for manufacturers and note that all safety assessment reports of GM products prepared by FSANZ are independently reviewed. On this basis, NZFGC supports the approval of MS11. This does not infer its use in New Zealand nor is this intended to influence any process for environmental release of GM organisms in New Zealand which is an entirely separate process.