Meat Industry Association of New Zealand (Inc)

Submission on Soy Leghemoglobin in Meat Analogue Products

13 February 2020

Introduction

1. The Meat Industry Association ('MIA') is the voluntary trade association representing New Zealand meat processors, exporters and marketers. MIA members represent 99 percent of domestic red meat production and export, and the meat industry is New Zealand's second largest goods exporter with $8.8 billion in annual exports, making the industry a critical part of the New Zealand economy.

2. Meat processing is New Zealand's largest manufacturing industry employing some 25,000 people in 60 processing plants, mainly in the regions. In many regional centres, the meat processor is the largest single employer. It is a central feature of the New Zealand economy and New Zealand's regional social fabric.

3. New Zealand meat is increasingly positioned as a "pure, natural product", and stressing the nutritional value of red meat.

4. We note that producers of 'fake meat' (such as the applicants) do not seek to claim to be natural or 'pure' products. However, in this case they claim to replicate not just the flavour and texture of meat, but also the particular nutrition characteristics of meat. It is therefore important to the industry that products that claim to replicate the particular properties of meat, albeit synthetically (in this case, through a genetically modified ingredient), have science to support that claim.

Truncated submission process

5. The MIA notes the extremely short time set by FSANZ to provide for submissions. FSANZ only released the call for submissions immediately before Christmas, with a deadline of 14 February.

6. This is particularly difficult given that the issue of "fake meat" which claims similar nutritional value to meat requires a considered response from the red meat industry.

7. This means that MIA is unable to provide FSANZ with a detailed review of the scientific evidence regarding the nutrition claims made, as we would have wished. MIA is considering undertaking this review and may make a late submission.

FSANZ preliminary position

8. The application is for use of soy leghemoglobin to be used in "meat analogue" products. According to FSANZ:

> FSANZ's risk and technical assessment (SD1) concluded that soy leghemoglobin in the form of LegH Prep is safe for human consumption at levels up to 0.8% soy leghemoglobin. The safety assessment of the source organism, *P.pastoris* and novel proteins, did not identify any public health and safety concerns.

9. As a result, the FSANZ preliminary position is the most appropriate permission would be:
    - As a food produced using gene technology derived specifically from the GM production strain *Pichia pastoris*
    - With a maximum permitted use level of 0.8% (w/w) in raw product
    - As a permitted form of iron
    - With identify and purity specifications for LegH Prep.

10. The MIA strongly supports a food standards system that is based on a scientific assessment of food safety risk. We do not agree with a so-called "precautionary" approach. Our concerns are that the product is reasonably safe and that it does not make claims which are misleading or false to the consumer.

Claims product is a nutritive source of iron

11. The application is that soy leghemoglobin is a "nutritive source of iron." The purpose of the ingredient is specifically intended "to replicate the nutrition (source of iron), flavour and aroma or myoglobin, an oxygen transporting haem protein found in the muscle tissue of animals" (i.e. meat).

12. The FSANZ document states:

> The nutrition assessment concluded that haem iron from soy leghemoglobin is likely to have similar bioavailability to haem iron from mammalian haem proteins (e.g. myoglobin present in muscle tissue). The absence of meat proteins in the proposed meat analogue products may decrease the bioavailability of haem iron from soy leghemoglobin. However, because iron absorption is regulated tightly by the body, and meat analogue products have higher total iron content due to higher content of non-haem iron relative to comparison foods, any decrease in haem iron bioavailability should not result in a nutritional disadvantage to consumers in Australia and New Zealand.

13. Further, FSANZ states:

> Use of soy leghemoglobin as an ingredient in the amount indicated by the applicant may meet the requirements for making a 'good source' nutrition content claim in relation to its iron content.

14. This will allow products with soy leghemoglobin to claim general level health claims, including about nutrition.

15. The MIA questions this.

16. One study is cited (Proulx and Reddy 2006) to support the claim that heme iron from soy root nodules has similar bioavailability as from meat.

17. However, the FSANZ document states that:

> The evidence is conflicting on the effect of plant proteins similar to those that would be present in the proposed Impossible Foods meat analogue products on haem iron bioavailability and there is limited research in this area. Some studies have found that partial substitution of meat with soy protein increased the bioavailability of haem iron (Lynch et al. 1985) while others have reported that the absorption of haem iron from meat-free meals is half that of haem in a meal with meat when protein content is constant (Hallberg et al. 1979).

18. Given that FSANZ states that the absence of meat proteins in the proposed meat analogue product may decrease haem iron bioavailability, then it is not accurate to state that meat analogue (fake meat) has similar nutrition characteristics as meat. Customers should not purchase fake or analogue meat under the misleading impression that they are buying a product that is nutritionally the same as meat.

Summary

19. While analogue meat using soy leghemoglobin is deemed by FSANZ as 'safe' to eat, it is not the case that it possesses the same or similar nutrition qualities as red meat.

20. FSANZ should ensure that products using soy leghemoglobin are not able to make claims that the product is nutritionally similar to meat.

MIA Contact

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MIA members and affiliate members as at July 2019

Members	Affiliate members
Advance Marketing Ltd	Abattoirs Association of New Zealand
AFFCO New Zealand Ltd	AgResearch Ltd
Alliance Group Ltd	Alfa Laval New Zealand Ltd
Ample Group Ltd	Allied Envirotech
ANZCO Foods Ltd	AON New Zealand Ltd
Arrow Commodities (NZ) Ltd	Auspac Ingredients Pty Ltd
Auckland Meat Processors Ltd	Centreport Ltd
Bakels Edible Oils (NZ) Ltd	CMA-CGM Group Agencies (NZ) Ltd
Ballande New Zealand Ltd	Cooltranz 2014 Ltd
Blue Sky Meats (NZ) Ltd	Conveyor Industries Ltd
BX Foods Ltd	Direct Fats and Oils Ltd
Columbia Exports Ltd	Ecolab Pty Ltd
Crusader Meats New Zealand Ltd	Foodcap International Ltd
Davmet (New Zealand) Ltd	G-Tech New Zealand Ltd
Farmlands Mathias International Ltd	Haarslev Industries Ltd
Fern Ridge Ltd	Hamburg-Sud New Zealand Ltd
Firstlight Foods Ltd	Hapag-Lloyd
GrainCorp Commodity Management NZ Ltd	Ibex Industries Limited
Greenlea Premier Meats Ltd	Intralox Ltd
Harrier Exports Ltd	Jasol
Integrated Foods Limited	Kemin Industries NZ Ltd
Kintyre Meats Ltd	Liqueo (HB) Ltd
Lanexco Ltd	Maersk NZ Ltd
Lowe Corporation Ltd	MJI Universal Pte Ltd
Midland International Ltd	Nestle New Zealand Ltd
NZ Natural Beef and Lamb Ltd	Oceanic Navigation Ltd
Ovation New Zealand Ltd	Port of Napier Ltd
Prime Range Meats Ltd	Port Otago Ltd
Progressive Meats Ltd	Pyramid Trucking Ltd
Provenance Meat (NZ) Ltd	Rendertech Ltd
PVL Proteins Ltd	Rockwell Automation (NZ) Ltd
SBT Group Ltd	SCL Products Ltd
Silver Fern Farms Ltd	Scott Technology Ltd
Standard Commodities NZ Ltd	Sealed Air (New Zealand)
Taylor Preston Ltd	Vero Insurance New Zealand Ltd
Te Kuiti Meat Processors Ltd	Wiley New Zealand Limited
UBP Ltd	
Value Proteins Ltd	
Wallace Corporation Ltd	
Wilbur Ellis (NZ) Ltd	
Wilmar Gavilon P ty Ltd	