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Reply to Second Round of Questions on Notice.

Inquiry into the Food Standards Amendment (Truth in Labelling – Genetically Modified Material) Bill 2010

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24 May 2011

Introduction

I gave evidence to the Inquiry into the Food Standards Amendment (Truth in Labelling – Genetically Modified Material) Bill 2010 on Tuesday 19 April by phone. I was given some questions on notice and replied to those in a previous document. I was then asked a further Question on Notice in an email dated 18 May 2011. That question is copied below (in bold) with my reply.

Question on Notice

In your opening statement to the committee, you referred to four instances where independent researchers have re-analysed the raw data and found evidence of harm that the GM company did not disclose and the regulators did not find. What were those products?

In my previous reply to Questions on Notice, I answered this question by providing the Committee with several scientific papers that were attached to my reply. Those papers provide all the details of (1) the GM crops that were investigated by these independent researchers, (2) the names of the independent investigators, (3) how they analysed the GM company's data and (4) the adverse effects they found in the data. The analysed data were obtained from regulators.

Below, I have summarised which GM crops were investigated in this way, with a description of what each of those crops is genetically modified to do, the adverse effects that were found by the independent researchers, and where this crop may be found in the human food supply.

GM crop number 1: MON863

The GM MON863 gene is inserted into corn plants so that the plant now produces a protein that is also a toxin, called a "Bt toxin", that acts as an insecticide. When a grub eats the plant, it also eats the toxin. The toxin causes pore-formation in the gut of the grub, the gut ruptures and the grub dies. This GM gene was developed by Monsanto.

Papers by Vendomois et al (2009), Seralini et al (2007), and Seralini et al (2009) provide details of the analysis of Monsanto's own data by independent researchers. These papers were attached to my reply to the previous Questions on Notice. Amongst other things, these independent researchers found evidence for toxicity in GM-fed rats, including liver and kidney problems, as well as indications of pre-diabetes. Furthermore, Seralini et al (2007) analysed the body weights of the rats, when Monsanto did not, and found problems as described in the discussion section of their paper.

GM crop number 2: MON810

The GM MON810 gene is inserted into corn plants so that the plant now produces a Bt protein in a similar way to that described for MON863, above, although it is a slightly different toxin designed to attack a different type of grub. This GM gene was also developed by Monsanto.

The paper by Vendomois et al, 2009 provides details of the analysis of Monsanto's own data by independent researchers. The authors found kidney problems in the rats fed the GM corn. The paper was attached to my reply to the previous Questions on Notice.

GM crop number 3: NK603

The GM NK603 gene was developed by Monsanto to insert into corn plants to make the corn plant resistant to Monsanto's herbicide, Roundup. When a corn plant has this gene in it, the plant becomes resistant to the spraying of Roundup so that if a corn field is sprayed with Roundup, the corn plants live while the weeds around them die.

The paper by Vendomois et al, 2009 provides details of the analysis of Monsanto's own data by independent researchers. The authors found kidney and muscle problems in GM-fed rats and said that the latter may be related to heart problems in the animals. The paper was attached to my reply to the previous Questions on Notice.

A note on stacked corn varieties

Please note that the original corn plants described above that were genetically modified to contain one GM gene, have since been widely hybridised with other GM corn varieties to produce a whole group of GM corn varieties that contain several GM genes at once. In fact, the GM genes described above have often been sold in the US is as a "double-stack" with each other, for example, MON863 "stacked" with NK603, or MON863 "stacked" with MON810. Indeed, all of the three genes described above are often sold together in the one plant as a triple-stack containing all of the genes described above, ie MON863, MON810 and NK603. Furthermore, an 8-stack GM corn variety containing eight GM genes has recently been granted approval to be planted in the US.

Please note that FSANZ does not separately assess these stacked varieties. If FSANZ has assessed a GM corn variety containing one of these genes as being safe to eat, it then considers all GM and non-GM hybrids of that GM corn to also be safe to eat without further assessment. It therefore does not require a separate safety assessment of any "stacked" GM crops, including the 8-stacked corn mentioned above. However, if the independent analyses of Monsanto's data are correct, then any adverse effects from individual GM genes should combine when they are stacked together. That is, as Vendomois et al 2009 publicly stated after their paper was published, when put together, the corn varieties MON863, MON810 and NK603 may damage all of the following: kidneys, liver, heart, adrenal glands, spleen and the haematopoietic system (which is the formation of red and white blood cells).

A note on where corn appears in the human food supply

Corn appears in the human food supply primarily in baked and fried goods such as: as corn chips, tacos, polenta, and the multitude of foods that contain one or more of: corn flour, corn starch, corn oil or high-fructose corn syrup.

GM crop number 4: Bt Brinjal

Brinjal is also called eggplant or aubergine. It is widely grown in India and widely eaten by people as a vegetable. This GM brinjal was genetically engineered to produce a Bt toxic protein, similar to that described for corn plants, above. The Indian company that presented the safety data to the Indian

regulators has strong links to Monsanto.

An independent assessment of the company's safety data was conducted by Gallagher in 2010. Her report was attached to my reply to the previous Questions on Notice. She found that the GM company's studies "were not conducted according to the published standard, did not accurately summarize results, and ignored toxic endpoints for rats fed Bt brinjal." The author also found that in the main company safety report, the "text does not match the data, the researchers did not sign their reports, and the cover page of the 90‐day report details a completely new report number (R/2183/SOR‐90) from that which may be the original, 05.0002." She described the GM company's report as a "substandard and extremely misleading interpretation of results". Her re-analysis of the company's safety data found that: "rats eating Bt brinjal experienced organ and system damage: ovaries at half their normal weight, enlarged spleens with white blood cell counts at 35 to 40 percent higher than normal …. indicating immune function changes possibly due to allergen response, and toxic effects to the liver...".