

Centre for Integrated Research in Biosafety

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Regulator deaf to sound science when it comes to safety concerns of GE high lysine corn

Media Statement – 20 December 2007

LY038, high lysine corn, is an animal feed. It is the first GE corn overtly designed to be substantially different in its nutritional profile; a profile designed for animals and not people. Since animals eat raw corn and humans eat cooked and processed corn, the animal feed may create human food hazards that would not have been detected by the safety assessment done only on raw corn. To avoid these risks, lysine could instead continue to be added to animal feed separately.

LY038 may produce a unique spectrum of food hazards because it has extremely high concentrations of the free amino acid lysine and some potentially toxic derivatives. When cooked, these substances form chemicals, called AGEs, that are strongly implicated in various diseases or their symptoms, including diabetes, Alzheimer's and cancer. The manufacturing company claims that only very small proportions of the new corn will mix with human food. However, even small quantities of such substances pose food safety risks. Moreover, once approval is given, there is no legal upper limit on the proportion of this corn that can enter the human food supply.

While AGEs are formed in other cooked foods, they are found at very low concentrations in conventional corn and other vegetables. Also, all AGEs are not alike. Some may be beneficial and some harmful. Prof. Jack Heinemann, of the Centre for Integrated Research in Biosafety, says that: "There is nothing known about either the kinds or the concentrations of AGEs that will form in products made from this corn." Even FSANZ agrees, saying that "it is reasonable to assume that processed corn products containing LY038 may contain an altered profile of AGE...compared to conventional corn".

Furthermore, the new protein introduced into the high lysine corn, called cDHDPS, has a significantly different structure compared to analogous proteins found in plants. The potential for this protein to elicit an immune response, particularly after cooking, was not laboratory tested. FSANZ, NZFSA and the Minister for Food Safety have chosen to not require the company to test for AGEs, and test for potential toxic and allergenic effects of AGEs and cDHDPS, despite being allowed to under internationally agreed food safety testing standards of the CODEX Alimentarius.

"In my view, our two most important regulatory authorities for food, FSANZ and NZFSA, have done a disservice to the people of New Zealand by accepting argument, assertion and speculation over scientific evidence. They have the power and right to require that this corn is a safe and a desirable product for human beings before any approval is issued" said Prof. Heinemann.