

Innspill til EFSA GMO Extranet

D.07.08 Toxicology

7.8.4 Testing of the whole GM food/feed

The GMO Panel of the Norwegian Scientific Committee for Food Safety has evaluated Amadea (AM04-1020) as a food and feed ingredient. We are concerned about the use of freeze dried raw potato when testing toxicity of Amadea as a food and feed component. Raw potato is indigestible for rats and humans. Previous studies from the same company shows increased caecum weight in test groups given raw potato but not in control groups given standard rat diet. Freeze drying of potato induces no gelatinisation of starch (Stefan Sahlstrøm, NOFIMA personal communication). Freeze dried baked potato as a food and feed ingredient induces no changes in the caecum weight of rats (Thompson et al. 2009).

In the rat experiments with the Amadea potato the amount of freeze-dried potato added in the diet was very low, and in only two concentrations; 2.5 and 5 % of the diet. No change in caecum weight was observed. This is probably due to the very low content of potato. Moreover, the OECD guidelines recommend testing in three test concentrations in addition to control. The test doses should be up to toxic effect or to the limit dose. The experiments should have been performed using cooked or baked potato in higher doses up to limit test concentration.

Another concern is the uses of only one inbred strain of rats in safety studies of food and feed ingredients. It is more proper to test the food and feed ingredient in either a battery of inbred strains or in outbred animals. Performing these studies using a small battery of inbred rats would give more reliable results (Festing 2010). In addition feeding studies should be performed in production animals where raw potato is a natural ingredient.

We would recommend that the faeces is analysed for its content of indigested starch. This should be included in all studies if raw GMO potatoes are tested.

References

Festing (2010) Toxicologic Pathology 38: 681-690.

Thompson, MD et al. (2009) Journal of Food Composition and Analysis 22: 571–576.