Testimony on GM Food Legislation, H.B. 2530: Prohibits importation of genetically engineered fish into this state.

I am in favor of this bill passing and labeling all GM fish sold in Oregon

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The Problem

This seems like an obvious problem. Do we want to take the chance of a GM fish getting into our local waters. We could devistate our native fish and irreparably damage the fishing industry.

I myself will not eat a GM fish and if they are brought into Oregon and are not labeled, I will additionally not be able to eat any fish that has a GM counterpart.

To pass this bill is to sign a death sentence to the Salmon industry.

Why do consumers such as myself feel uncomfortable about GM salmon and other GM fish?

There is no proof to show humans can safely eat GM fish. There is no research. The U.S. government has never researched the safety of GM fish at all!

This is an issue for consumers. The FDA claims GM fish is "substantially equivalent" to its conventional fish counterpart when it comes to research or labeling, but apparently GM food is substantially different when the companies get these foods patented. According to the FDA GM food does not need testing due to this substantial equivalence. Our government leaves it up the the companies supplying the GM food to do the research. However, these companies have no incentive to do the proper long term research needed. (For example they should do two-year research with mice as this is their life span. Easy to do, but they do only 3 months.) The amount of research these companies provides is underwhelming in length of research time as well as number of experiments undertaken. Therefore these experiments do not pick up chronic disease, infertility, tumors etc that has been shown in research from other countries than the United States. Research by non-GM companies, has shown GM food fed to

animals leads to problems in growth, reproduction, and mortality rate. Specifically, when GM fed animals are compared to controls, the GM fed animals have decreased mortality amongst babies, smaller babies, growth of hair inside animals mouths, changes in testes, including damage to sperm cells, damage to the kidney and the liver, tumors in various organs, extreme changes in androgen/estrogen balance in females and extremely increased estrogen levels in males. I have listed abstracts of various research articles for you to review and links to read the entire articles when they are available on-line for free. I suggest you do read the entire articles as they will educate you as to the problem. I would collect more articles for you if am given the time. The deadline to turn this testimony in, is today and I have to give you what I have so far. Let me know if you wish to see more.

Let me be very clear. This research on animals is from other countries as our country has decided we do not need to research GM food. There is no short term or long-term research on humans other than that which is being undertaken on the consumers in the United States without their consent.

Don't wait for the consumers in the United States to decide to sue the government in a class action law suit for making them part of an ongoing experiment without their consent. Let the consumers opt out of being unwilling subjects by providing labels on food to identify GM organisms in all food on the market be it human or animal food.

Research Supporting Health Problems with Current GM Foods

Food Chem Toxicol. 2012 Nov;50(11):4221-31. doi: 10.1016/j.fct.2012.08.005. Epub 2012 Sep 19.
For full text do to http://research.sustainablefoodtrust.org/wp-content/uploads/2012/09/Final-Paper.pdf

Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize.

Séralini GE, Clair E, Mesnage R, Gress S, Defarge N, Malatesta M, Hennequin D, de Vendômois JS.

Source

University of Caen, Institute of Biology, CRIIGEN and Risk Pole, MRSH-CNRS, EA 2608, Esplanade de la Paix, Caen Cedex 14032, France. criigen@unicaen.fr

Abstract

The health effects of a Roundup-tolerant genetically modified maize (from

11% in the diet), cultivated with or without Roundup, and Roundup alone (from 0.1 ppb in water), were studied 2 years in rats. In females, all treated groups died 2-3 times more than controls, and more rapidly. This difference was visible in 3 male groups fed GMOs. All results were hormone and sex dependent, and the pathological profiles were comparable. Females developed large mammary tumors almost always more often than and before controls, the pituitary was the second most disabled organ; the sex hormonal balance was modified by GMO and Roundup treatments. In treated males, liver congestions and necrosis were 2.5-5.5 times higher. This pathology was confirmed by optic and transmission electron microscopy. Marked and severe kidney nephropathies were also generally 1.3-2.3 greater. Males presented 4 times more large palpable tumors than controls which occurred up to 600 days earlier. Biochemistry data confirmed very significant kidney chronic deficiencies; for all treatments and both sexes, 76% of the altered parameters were kidney related. These results can be explained by the non linear endocrine-disrupting effects of Roundup, but also by the overexpression of the transgene in the GMO and its metabolic consequences.

Nature Biotechnology 22, 170 - 172 (2004)
doi:10.1038/nbt0204-170

The fate of transgenes in the human gut

John Heritage1

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Abstract

Gut microbes that cannot be recovered in artificial culture may acquire and harbor genes from genetically modified plants.

Can transgenic DNA in a genetically modified (GM) crop be transferred to the people or animals that eat the crop or to their intestinal microflora (Fig. 1)?

Nature Biotechnology 22, 204 - 209 (2004)
Published online: 18 January 2004 | doi:10.1038/nbt934

Assessing the survival of transgenic plant DNA in the human gastrointestinal tract

Trudy Netherwood1,2, Susana M Martín-Orúe1, Anthony G O'Donnell2, Sally Gockling1,2, Julia Graham1,2, John C Mathers3,4 & Harry J Gilbert1

Abstract

The inclusion of genetically modified (GM) plants in the human diet has raised concerns about the possible transfer of transgenes from GM plants to intestinal microflora and enterocytes. The persistence in the human gut of DNA from dietary GM plants is unknown. Here we study the survival of the transgene epsps from GM soya in the small intestine of human ileostomists (i.e., individuals in which the terminal ileum is resected and digesta are diverted from the body via a stoma to a colostomy bag). The amount of transgene that survived passage through the small bowel varied among individuals, with a maximum of 3.7% recovered at the stoma of one individual. The transgene did not survive passage through the intact gastrointestinal tract of human subjects fed GM soya. Three of seven ileostomists showed evidence of low-frequency gene transfer from GM soya to the microflora of the small bowel before their involvement in these experiments. As this low level of epsps in the intestinal microflora did not increase after consumption of the meal containing GM soya, we conclude that gene transfer did not occur during the feeding experiment.

J Agric Food Chem. 2008 Dec 10;56(23):11533-9.
Intestinal and peripheral immune response to MON810 maize ingestion in weaning and old mice.
Finamore A, Roselli M, Britti S, Monastra G, Ambra R, Turrini A, Mengheri E.
Source

Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione, Roma, Italy.
Abstract

This study evaluated the gut and peripheral immune response to genetically modified (GM) maize in mice in vulnerable conditions. Weaning and old mice were fed a diet containing MON810 or its parental control maize or a pellet diet containing a GM-free maize for 30 and 90 days. The immunophenotype of intestinal intraepithelial, spleen, and blood lymphocytes of control maize fed mice was similar to that of pellet fed mice. As compared to control maize, MON810 maize induced alterations in the percentage of T and B cells and of CD4(+), CD8(+), gammadeltaT, and alphabetaT subpopulations of weaning and old mice fed for 30 or 90 days, respectively, at the gut and peripheral sites. An increase of serum IL-6, IL-13, IL-12p70, and MIP-1beta after MON810 feeding was also found. These results suggest the importance of the gut and peripheral immune

response to GM crop ingestion as well as the age of the consumer in the GMO safety evaluation.

http://www.gmo-safety.eu/debate.html

Biological effects of transgenic maize NK603xMON810 fed in long term reproduction studies in mice

Full report at

http://www.biosicherheit.de/pdf/aktuell/zentek_studie_2008.pdf

01.oct.08

Dr. A. Velimirov, Dr. C. Binter , Univ. Prof. Dr. J. Zentek

Abstract

The aim of the study was to examine effects of the stacked GM crop NK603 x MON810 in different models of long term feeding studies. So far no negative effects of GM corn varieties have been reported in peer-reviewed publications. But the hypothesis, that effects after long term exposure might become evident in multi-generation studies has rarely been investigated.

In this study three designs were used, including a multi-generation study (MGS), a reproductive assessment by continuous breeding (RACB) and a life-term feeding study (LTS), all performed with laboratory mice (strain OF1). The test diets differed only as to the inclusion of 33% NK603 x MON810 corn (GM) versus non-GM corn of a near isogenic line (ISO), both grown under identical conditions in Canada. The MGS also included one group with a non GM corn cultivated in Austria (A REF). All corn varieties used in the MGS and LTS were harvested in 2005, the transgenic and isogenic corn for the RACB were harvested in Canada in 2007. No Austrian corn was used in this case. In the MGS microscopic and ultrastructural investigations were performed to detect changes at the organ and cell level. Gene expression patterns were compared by micro array expression profiles of the intestine as feed-animal interface and by real time

PCR.

The results of the MGS showed no statistically significant differences concerning parental body mass. The number of females without litters decreased with time in the GM and ISO group, especially in the 4th generation. In the group fed with A REF corn fewer females were without litters, and accordingly more pups were weaned. The production parameters average litter size and weight as well as number of weaned pups were in favour of the ISO group. These differences were also seen in the RACB design and were statistically significant in the 3rd and 4th litters. In addition, the inter-individual variability was higher in the GM group as compared to the other groups. The LTS showed no statistically significant differences in the survival of 3 groups of mice fed the different maize varieties.

In the MGS the continuative investigations revealed differences between the GM and ISO groups. The comparison of organ weights did not indicate directed dietary effects, except for kidneys. The electron histological investigation of the cell nuclei revealed differences as to fibrillar centres, dense fibrillar components and the pore density in hepatocytes, and cells from spleen and pancreas. This could point to an effect of the GM crop on metabolic parameters. Immunohistochemistry revealed no systematic differences in CD3, CD20 positive cells and macrophages in gut tissue. The microarrays showed differences between the feeding groups. When the data of both non-GM feeding groups from MGS were combined and compared to the GM feeding group, the discrimination became more evident. Analyses of metabolic pathways indicated, that the groups differed regarding some important pathways, including interleukin signalling pathway, cholesterol biosynthesis and protein metabolism.

Summarizing the findings of this study it can be concluded, that multi-generation studies, especially based on the RACB design are well suited to reveal differences between feeds. The RACB trial showed time related negative reproductive effects of the GM maize under the given experimental conditions. The RACB trial with its specific design with the repeated use of the parental generation is a demanding

biological factor for the maternal organism. Compared to the findings in the RACB trials it can be assumed that the physiological stress was considerably lower in the MGS trial. The trial design of using “new” parental generations instead of continuous breeding with the same generation has to be considered as being obviously less demanding. This might have masked the impact of dietary factors on reproductive performance. However, this part of the experiment is valuable as such because it underlines the need for different experimental designs for the assessment of dietary effects that have an unknown impact on animals. The outcome of this study suggests that future studies on the safety of GM feed and food should include reproduction studies. Physiological and genomic traits and depending on the nature of the genetic modification proteomic and metabolomic methods might be taken into consideration as additional tools to the tests performed in this study.

Eur J Histochem. 2004 Oct-Dec;48(4):448-54.

Ultrastructural analysis of testes from mice fed on genetically modified soybean.

Vecchio L, Cisterna B, Malatesta M, Martin TE, Biggiogera M.

Abstract

We have considered the possible effects of a diet containing genetically modified (GM) soybean on mouse testis. This organ, in fact, is a well known bioindicator and it has already been utilized, for instance, to monitor pollution by heavy metals. In this preliminary study, we have focussed our attention on Sertoli cells, spermatogonia and spermatocytes by means of immunoelectron microscopy. Our results point out that the immunolabelling for Sm antigen, hnRNPs, SC35 and RNA Polymerase II is decreased in 2 and 5 month-old GM-fed mice, and is restored to normal at 8 months. In GM-fed mice of all ages considered, the number of perichromatin granules is higher and the nuclear pore density lower. Moreover, we found enlargements in the smooth endoplasmic reticulum in GM-fed mice Sertoli cells. A possible role played by traces of the herbicide to which the soybean is resistant is discussed.

A novel endocrine-disrupting agent in corn with mitogenic activity in human breast and prostatic cancer cells.

Barry Markaverich, Shaila Mani, Mary Ann Alejandro, Andrea Mitchell, David Markaverich, Trellis Brown, Claudia Velez-Trippe, Chris Murchison, Bert O'Malley, and Robert Faith

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Full article at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1240732/pdf/ehp0110-000169.pdf

See letter "Corn and corn-derived products: sources of endocrine disruptors." in volume 111 on page A691.

This article has been cited by other articles in PMC.

Abstract

Housing adult rats on ground corncob bedding impedes male and female mating behavior and causes acyclicity in females. The suppressive effects on ovarian cyclicity are mimicked by a mitogenic agent purified from the ground corncob bedding material (corn mitogen; CM), which stimulates the proliferation of estrogen receptor (ER)-positive (MCF-7 cells) and ER-negative (MDA-MD-231 cells) breast cancer cells. Purified CM does not compete for [(3)H]estradiol binding to ER or nuclear type II sites, and its effects on MCF-7 breast cancer cell proliferation are not blocked by the antiestrogen ICI-182,780. These results suggest that the active component is unlikely to be a phytoestrogen, bioflavonoid, mycotoxin, or other known endocrine-disrupting agent that modifies cell growth via ER or type II [(3)H]estradiol binding sites. CM also stimulates the proliferation of PC-3 human prostatic cancer cells in vitro, and

the growth rate of PC-3 cell xenografts is accelerated in nude male mice housed on ground corncob as opposed to pure cellulose bedding. Consequently, this endocrine-disrupting agent in ground corncob bedding may influence behavioral and physiologic reproductive response profiles and malignant cell proliferation in experimental animals. Fresh corn (kernels and cob) or corn tortillas also contain CM, indicating that human exposure is likely; consequently, CM and/or related mitogens in corn products may influence human health and development.