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Genetically Modified Soy Linked to Sterility, Infant Mortality

"This study was just routine," said Russian biologist Alexey V. Surov, in what could end up as the understatement of this century. Surov and his colleagues set out to discover if Monsanto's genetically modified (GM) soy, grown on 91% of US soybean fields, leads to problems in growth or reproduction. What he discovered may uproot a multi-billion dollar industry.

After feeding hamsters for two years over three generations, those on the GM diet, and especially the group on the *maximum* GM soy diet, showed devastating results. By the third generation, most GM soy-fed hamsters lost the ability to have babies. They also suffered slower growth, and a high mortality rate among the pups.

And if this isn't shocking enough, some in the third generation even had hair growing inside their mouths—a phenomenon rarely seen, but apparently more prevalent among hamsters eating GM soy.

The study, jointly conducted by Surov's Institute of Ecology and Evolution of the Russian Academy of Sciences and the National Association for Gene Security, is expected to be published in three months (July 2010)—so the technical details will have to wait. But Surov sketched out the basic set up for me in an email.

He used Campbell hamsters, with a fast reproduction rate, divided into 4 groups. All were fed a normal diet, but one was without *any* soy, another had non-GM soy, a third used GM soy, and a fourth contained higher amounts of GM soy. They used 5 pairs of hamsters per group, each of which produced 7-8 litters, totally 140 animals.

Surov told [*The Voice of Russia*](#),

"Originally, everything went smoothly. However, we noticed quite a serious effect when we selected new pairs from their cubs and continued to feed them as before. These pairs' growth rate was slower and reached their sexual maturity slowly."

He selected new pairs from each group, which generated another 39 litters. There were 52 pups born to the control group and 78 to the non-GM soy group. In the GM soy group, however, only 40 pups were born. And of these, 25% died. This was a fivefold higher death rate than the 5% seen among the controls. Of the hamsters that ate *high* GM soy content, only a single female hamster gave birth. She had 16 pups; about 20% died.

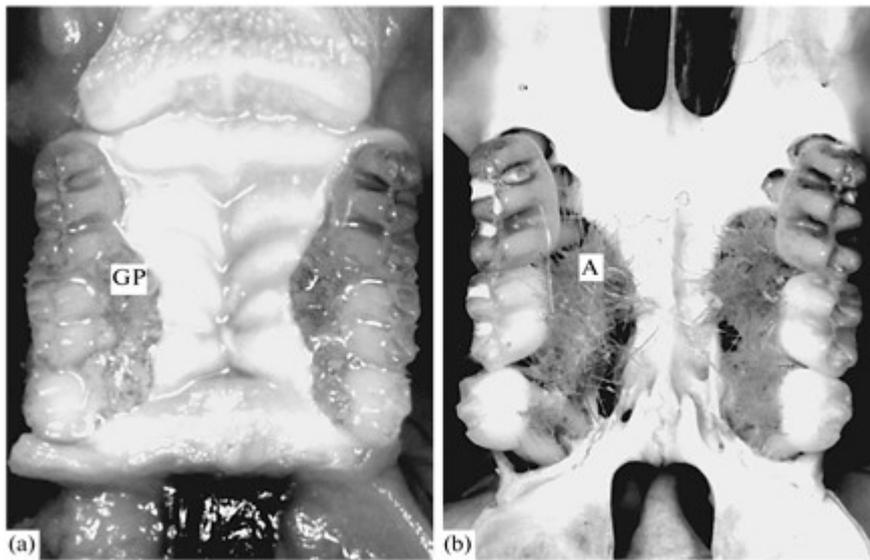
Surov said "The low numbers in F2 [third generation] showed that many animals were sterile."

The published paper will also include measurements of organ size for the third generation animals, including testes, spleen, uterus, etc. And if the team can raise sufficient funds, they will also analyze hormone levels in collected blood samples.

Hair Growing in the Mouth

Earlier this year, Surov co-authored a paper in *Doklady Biological Sciences* showing that in rare instances, hair grows inside recessed pouches in the mouths of hamsters.

"Some of these pouches contained single hairs; others, thick bundles of colorless or pigmented hairs reaching as high as the chewing surface of the teeth. Sometimes, the tooth row was surrounded with a regular brush of hair bundles on both sides. The hairs grew vertically and had sharp ends, often covered with lumps of a mucous."



“(a) The external appearance of the oral cavity. Gingival pouches (GP) with thick bundles of hair growing from their mucous lining are clearly seen. (b) Perforated bone tissue of the teeth of an adult *Ph. campbelli*. Numerous hollows are seen. A, hair.”

From A. S. Baranov, O. F. Chernova, N. Yu. Feoktistova, and A. V. Surov, “A New Example of Ectopia: Oral Hair in Some Rodent Species,” *Doklady Biological Sciences*, 2010, Vol. 431, pp. 117–120, Original Russian Text © A.S. Baranov, O.F. Chernova, N.Yu. Feoktistova, A.V. Surov, 2010, published in *Doklady Akademii Nauk*, 2010, Vol. 431, No. 4, pp. 559–562.

At the conclusion of the study, the authors surmise that such an astounding defect may be due to the diet of hamsters raised in the laboratory. They write, "This pathology may be exacerbated by elements of the food that are absent in natural food, such as genetically modified (GM) ingredients (GM soybean or maize meal) or contaminants (pesticides, mycotoxins, heavy metals, etc.)." Indeed, the number of hairy mouthed hamsters was much higher among the third generation of GM soy fed animals than anywhere Surov had seen before.

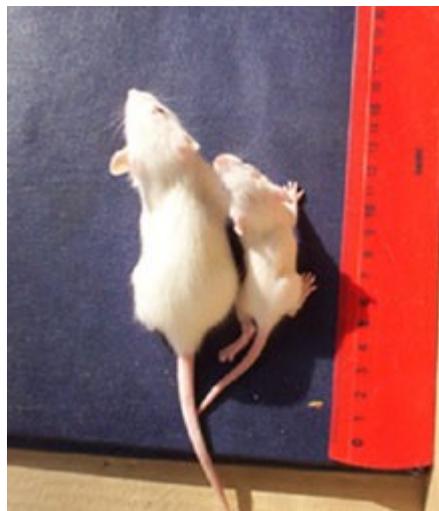
Preliminary, But Ominous

Surov warns against jumping to early conclusions. He said, "It is quite possible that the GMO does not cause these effects by itself." Surov wants to make the analysis of the feed components a priority, to discover just what is causing the effect and how.

In addition to the GMOs, it could be contaminants, he said, or higher herbicide residues, such as

Roundup. There is in fact much higher levels of Roundup on these beans; they're called "Roundup Ready." Bacterial genes are forced into their DNA so that the plants can tolerate Monsanto's Roundup herbicide. Therefore, GM soy always carries the double threat of higher herbicide content, couple with any side effects of genetic engineering.

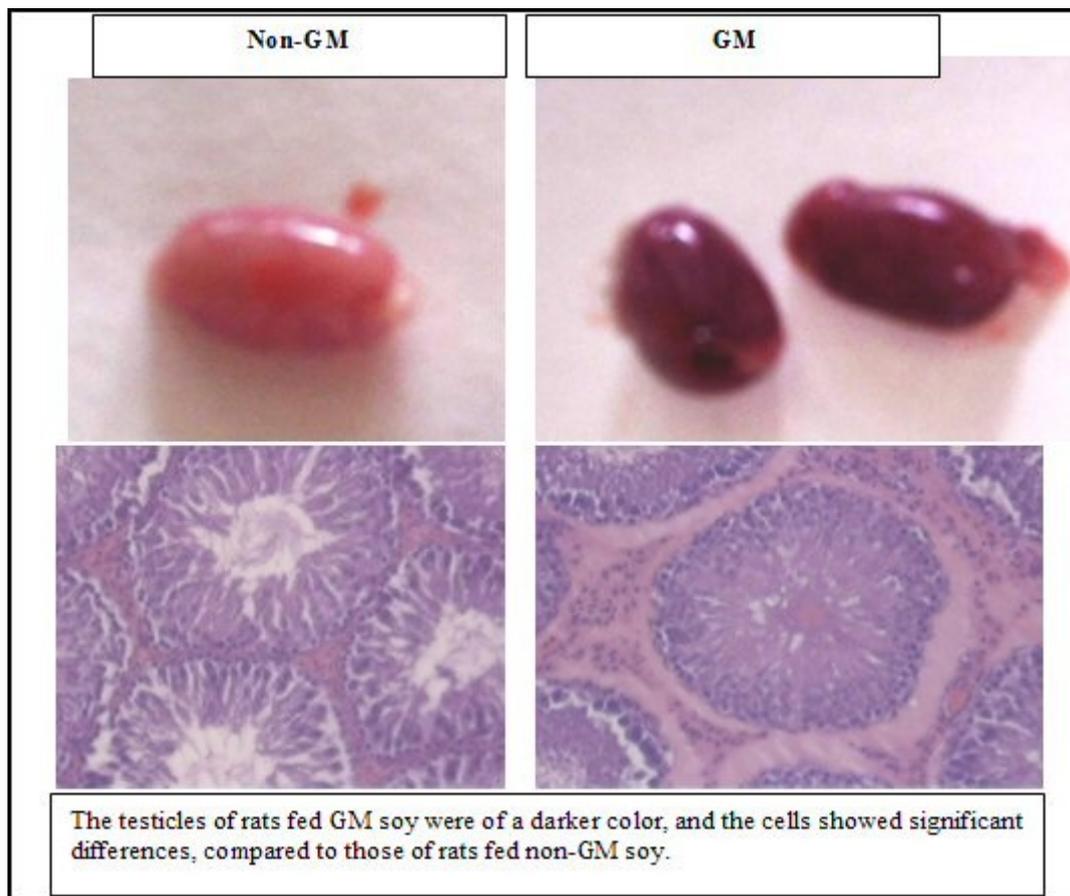
Years of Reproductive Disorders from GMO-Feed



Surov's hamsters are just the latest animals to suffer from reproductive disorders after consuming GMOs. In 2005, Irina Ermakova, also with the Russian National Academy of Sciences, reported that more than half the [babies from mother rats fed GM soy died](#) within three weeks. This was also five times higher than the 10% death rate of the non-GMO soy group. The babies in the GM group were also smaller (see photo) and could not reproduce.

In a telling coincidence, after Ermakova's feeding trials, her laboratory started feeding *all* the rats in the facility a commercial rat chow using GM soy. Within two months, the infant mortality facility-wide reached 55%.

When Ermakova fed male rats GM soy, their testicles changed from the normal pink to dark blue!



Italian scientists similarly found [changes in mice testes \(PDF\)](#), including damaged young sperm cells. Furthermore, the DNA of embryos from parent mice fed GM soy functioned differently.

An Austrian government study published in November 2008 showed that the more GM corn was

fed to mice, [the fewer the babies they had \(PDF\)](#), and the smaller the babies were.

Central Iowa Farmer Jerry Rosman also had trouble with pigs and cows becoming sterile. Some of his pigs even had false pregnancies or gave birth to bags of water. After months of investigations and testing, he finally traced the problem to GM corn feed. Every time a newspaper, magazine, or TV show reported Jerry's problems, he would receive calls from more farmers complaining of livestock sterility on their farm, linked to GM corn.

Researchers at Baylor College of Medicine accidentally discovered that rats raised on corncob bedding "[neither breed nor exhibit reproductive behavior](#)." Tests on the corn material revealed two compounds that stopped the sexual cycle in females "at concentrations approximately two-hundredfold lower than classical phytoestrogens." One compound also curtailed male sexual behavior and both substances contributed to the growth of breast and prostate cancer cell cultures. Researchers found that the [amount of the substances varied with GM corn varieties](#). The crushed corncob used at Baylor was likely shipped from central Iowa, near the farm of Jerry Rosman and others complaining of sterile livestock.

In Haryana, India, a team of investigating veterinarians report that buffalo consuming GM cottonseed suffer from infertility, as well as frequent abortions, premature deliveries, and prolapsed uteruses. Many adult and young buffalo have also died mysteriously.

Denial, Attack and Canceled Follow-up

Scientists who discover adverse findings from GMOs are regularly attacked, ridiculed, denied funding, and even fired. When Ermakova reported the high infant mortality among GM soy fed offspring, for example, she appealed to the scientific community to repeat and verify her preliminary results. She also sought additional funds to analyze preserved organs. Instead, she was attacked and vilified. Samples were stolen from her lab, papers were burnt on her desk, and she said that her boss, under pressure from his boss, told her to stop doing any more GMO research. No one has yet repeated Ermakova's simple, inexpensive studies.

In an attempt to offer her sympathy, one of her colleagues suggested that maybe the GM soy will solve the over population problem!

Surov reports that so far, he has not been under any pressure.

Opting Out of the Massive GMO Feeding Experiment

Without detailed tests, no one can pinpoint exactly what is causing the reproductive travesties in Russian hamsters and rats, Italian and Austrian mice, and livestock in India and America. And we can only speculate about the relationship between the introduction of genetically modified foods in 1996, and the corresponding upsurge in low birth weight babies, infertility, and other problems among the US population. But many scientists, physicians, and concerned citizens don't think that the public should remain the lab animals for the biotech industry's massive uncontrolled experiment.

Alexey Surov says, "We have no right to use GMOs until we understand the possible adverse effects, not only to ourselves but to future generations as well. We definitely need fully detailed studies to clarify this. Any type of contamination has to be tested before we consume it, and GMO is just one of them."

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