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Ag Biotech Policy - Emotion Takes Precedence Over Science

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Approved By:

Lashonda McLeod

Prepared By:

Marie-Cecile Henard

Report Highlights:

The scientific credibility of the Seralini study on the toxicological impact of bioengineered corn NK603 and roundup herbicide on rats has been debunked by the eight national agencies (and the European Union) that have reviewed it, and the wide majority of the scientific community. A well-orchestrated media campaign, with ethics breach pointed by many; nevertheless, has proved to be efficient in raising fears and opposition towards agricultural biotechnology, reviving controversy. This has been the case not only in the public opinion, scared by a shocking media campaign that linked bioengineered products with cancer, but also for policy makers, whose positions have hardened against the technology. As a result, the scientific community is concentrating on increasing its visibility and credibility towards the public, as part of its long-term strategy.

General Information:

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1. Most of the Science Community has Discredited the Science of the Study

• **National Authorities Reject the Study**

To date, the national authorities of the European Union, France, the Netherlands, Denmark, Brazil, Belgium, Australia, and New Zealand, and Canada have pointed the scientific weaknesses of the study and rejected its conclusions:

Country	Agency	Date	Hyperlinks to Reviews
European Union	European Food Safety Agency (EFSA)	November 28	Final review (in English)
France	High Council on Biotechnology (HCB)	October 19	Press release (in English) Science Committee's executive summary (in English) Science Committee's full review (in English) Committee on Economic, Ethical and Social issues' recommendation (in English)
	Food, Environment and Work Safety (ANSES)	October 19	Recommendation (in French)
Denmark	DTU Food, National Food Institute	November 11	Assessment (in English)
Netherlands	NVWA	October 3	Assessment (in Dutch)
Canada	Health Canada and the Canadian Food Inspection Agency	October 25	Statement (in English)
Belgium	Biosecurity Council		Advice (in English)
Brazil	Biosafety Technical Commission	October 25	Considered Opinion (in English)
Australia and New Zealand	Food Standards Australia New Zealand	October	Preliminary assessment (in English)
Germany	BfR	October 1	Opinion (in English)

On November 15, a full-page interview of Catherine Geslain-Laneele, EFSA's Director, was published in *Le Figaro* daily newspaper, titled "GMOs approved in Europe do not present health risk" where EFSA's review of the Seralini study is presented, as well as EFSA's method of reviewing bioengineered products, EFSA's action since its creation in 2002. The full interview is available [here](#).

- **Hearings by the Parliament Science Committee**

On November 19, 2012, the Science Committee of the French Parliament (in French, "Office Parlementaire des Choix Scientifiques et Technologiques," or OPECST) organized public hearings on the outcome of the Seralini study. Eight experts presented their testimonies on the health impact of genetically engineered (GE) products, including Franck Foures, Deputy Director for risk evaluation in

food, National Agency for Food, Environmental and Occupational Health and Safety (ANSES); Jean-Christophe Pagès, President, Science Committee, High Council on Biotechnology (HCB); Gilles-Eric Seralini, Molecular Biology Professor, University of Rouen; Gérard Pascal, honorary Research Director in toxicology, former researcher in the National Research Institute in Agriculture (INRA) and former member of the Biomolecular Engineering Committee (CGB, which preceded HCB); Paul Deheuvels, member of the Academy of Science and Professor in the Pierre & Marie Curie University; Dominique Parent-Massin, President, French Society of Toxicology; Robert Bellé, Biologist, Professor in the Pierre & Marie Curie University; and Agnès Ricroch, Professor and Researcher in the AgroParisTech University, adjunct professor, Penn State University.

During the hearings, experts underlined the study's weaknesses, including the statistical methodology (considered weak and inconsistent), the rat breed used, the lack of transparency around the rough data and the identity of the laboratory where the study was conducted, which does not specialize in toxicology. Most experts mentioned other studies conducted on long-term health impact of GE crops, although not numerous, concluded GE crops are safe. On the other hand, Dr. Seralini didn't want to reveal the identity of the laboratory where the study was conducted and around the rough data of the study: he said that he can make them available to a bailiff if Monsanto does the same with the rough data on Roundup and NK603 GE corn health impact studies. He questioned the safety of Roundup (more than just glyphosate), which he believes needs to be assessed by long-term studies. Paul Deheuvels considered the Seralini study as a "founding experience," and believed it is statistically significant. The safety of glyphosate was questioned by Xavier Bellé, who believed it is carcinogenic.

Jean-Yves Le Déaut, Member of Parliament and First Vice-President of OPECST chaired the OPECST hearings and considered that biotechnology must be complementary to other technologies in agriculture, and that while some GE crops are useful, others may not be. He stated that generalizing the conclusions of one GE plant to all GE crops can be considered as a religion, not science.

- **Opinion of INRA's President and Chief Executive**

Francois Houllier, President of France's National Research Institute in Agriculture (INRA), signed a one-page comment titled "Bring more rigour to GM research" published in *Nature* dated November 15. In this comment, Dr. Houllier opined that "there is a need for extra rigour in research whenever it tackles sensitive topics such as GM crops and food." He continued that "until science moves to the forefront, I believe the debate risks remaining mired in confusion and misinformation, no what improvements are made in public engagement." More specifically, Dr. Houllier recalled the difficulty to conduct open-field testing of bioengineered plants in France (referring to the destructions of INRA's transgenic vines in 2009 and 2010), and insisted "research must always follow proper academic standards" (was it the case in the Seralini study?).

- **Opinion of the French Society of Toxicological Pathology**

In a [letter](#) to the editor of the journal where the Seralini study was published (*Food and Chemical Toxicology*), SFPT's Board of Director's President bluntly criticized the scientific basis of the Seralini study, and concluded "given this study presents serious deficiencies in the protocol, the procedures and the interpretation of the results, the SFPT cannot support any of the scientific claims drawn by the authors, and any relevance for human risk assessment."

2. Higher Public Fears – Scientists Actions to Improve Communication to the Public

As a result of intense media coverage and threatening communication campaign around the study (see [GAIN report FR9122](#), dated 10/25/2012), recent polls conducted in France after the Seralini study was revealed in the media indicated that the opinion has never as negative: almost 80 percent of the French polled have a negative perception of plant biotechnology used in food.

- **Parliament Hearings: Ethics Breach in Initial Media Coverage of the Study – Controversies Reduce Trust in Science and Experts**

At the Parliament hearings on November 19, eleven experts presented their testimonies on the ethical challenges of science communication, including Michel Alberganti, science journalist on France-Culture radio; Sylvestre Huet, science journalist in *Libération* newspaper, president of the Association of the Science Journalists; Valéry Laramée de Tannenber, President, Association of Journalists in Environment; Jean-François Dhainaut, President, (HCB); Olivier Godard, Research Director, National Center on Science Research (CNRS); Francis Chateauraynaud, Education Director, University for Higher Education on Social Sciences (EHESS), director of the pragmatic and reflexive sociology group (GSPR); Marc Mortureux, Director General, ANSES; Christine Noiville, President, Economic, Ethical, and Social Committee, HCB; Pierre-Benoît Joly, research Director, INRA; and Jean Masson, former President, INRA/Colmar (Alsace).

There was more of a consensus among experts to denounce the method of communication that was used to announce the conclusions of the Seralini study in the French media. All experts denounced the fact that the weekly newspaper *Le Nouvel Observateur* that announced the study and named its article "GMOs are Poisons" did not respect the one-week embargo usually respected by science journalists when informed of a scientific paper, and before publishing an article about it. While this embargo usually allows journalists to investigate on other publications and find background information to

release balanced analysis of newly announced scientific findings, it was not the case for the Seralini study, and in the first days when it was released, the media were all supportive of its conclusions, as journalists were looking for “scoops” without in-depth analysis.

Ethics breach and danger to prematurely communicate to the public on scientific issues were denounced, while the articles published initially by *Le Nouvel Observateur* were qualified of a “press kit” rather than an analysis, and some wondered whether it was a violation of the press laws. Olivier Godard summarized the outcome of the study saying that Seralini was “scientifically wrong but politically right,” and Christine Noiville opined that the public was the hostage of messages generating anxiety by media pressure.

When closing the hearings, member of Parliament Le Déaut insisted that building trust in science, research, and experts is important, while controversies like the one emerging from the Seralini study are in the opposite direction.

- **French Association for Science Information – Preconceived Ideas Among Hostile Public Difficult to Address by Scientific Arguments**

The French Association for Science Information (in French, “Association Française pour l’Information Scientifique” - AFIS) organized a seminar named “How to Inform on GMOs?” on November 17 with two science journalists of the popular press authors of several articles on the Seralini study.

In the first days of the publication of the Seralini study, AFIS had published a [statement](#) titled, “GMOs: Science is a pretext for a political and media show,” where it was recalled that “one scientific article isn’t source of truth” as “science is reproducibility of experiments.” AFIS believed that “a thorough review of the text and reproduction of experiments should be logically initiated.” AFIS feared that “if the text proves to be incorrect and experiment biased, the adjustments that will take time to be established, will be inaudible.”

On a wider perspective on agricultural biotechnology, it was observed at the seminar that a major part of the public in France has strong preconceived ideas about agricultural biotechnology. As people hostile to the technology have their own references and sources of information of the “urban legend” type, legitimate scientific arguments are not sufficient to make a difference. In such conditions, the public has some difficulty reading articles not in line with their own opinions in their usual sources of information. This explains why several science journalists in media traditionally not open to agricultural biotechnology, but who questioned the scientific validity of the Seralini study, were vehemently criticized by many of their readers in the past few weeks.

- **Exploring Ways to Improve Communication to the Public by Scientists on Plant Biotechnology**

The release of the Seralini study was followed by numerous reactions by French scientists, either individual or collective, in the general and scientific media (see [GAIN report FR9119](#), dated 10/9/2012). On December 5, the National Academy of Agriculture organized a session on the development of bioengineered crops in agriculture. The program and summaries of the speakers' presentations are available at: http://www.academie-agriculture.fr/detail-seance_310.html

The session concluded on the importance for scientists to be more upfront and inform the public on these issues, so that consumers can better understand the utility and advantages for themselves (direct and indirect) of food products derived from GE crops. A working group on these specific issues was created in the Academy.

La Recherche is a monthly magazine well known to the public for its communication on recent scientific findings through articles and interviews geared toward a general readership. "GMOs: thruths and lies," makes the headlines of the December issue of *La Recherche*. The interviews, analysis of the Seralini study and its impacts, and of the agricultural biotech products assessment and regulation in the European Union are an excellent example of informative, objective and unbiased scientific information that the science community can provide to the public contributing to their understanding without soliciting emotions or fears. For more information, please see <http://www.larecherche.fr/mensuel/470>

3. Negative Public Perception More Important than Scientific Arguments for Policy Makers

- **More Radically Hostile Positions Towards Agricultural Biotechnology**

Political positions on agricultural biotechnology have hardened since the release of the Seralini study. As early as September 20, the day after the release of the study in the popular press, France's Prime Minister stated that "if the danger of GMOs is confirmed, France will support their ban at the European level." On the same day, the Ministers of Agriculture, Health and Environment, in a joint press communiqué, considered the study's conclusions as being in line with the GOF's precautionary principle approach on agricultural biotechnology and asked European authorities to strengthen their health and environmental assessment practices. (for more information, see [GAIN report FR9111](#), dated September 21, 2012)

Since then, despite the deep discredit of the study by the science community and official risk assessment authorities, and following the emotion and fears raised among the public by a well-orchestrated but ethically-questionable communication campaign, policy makers continue to give credit to the

conclusions of the study.

For example, in early November, five former Ministers and Junior Ministers of Environment (Segolene Royal, Dominique Voynet, Corinne Lepage, Nathalie Kosciusco-Morizet, and Chantal Jouanno) called for changing risk assessment of bioengineered products prior to their approval to new expertise protocols.

- **Impact on Domestic Policy: Agricultural Biotechnology Expected to Remain Absent from France's Strategy**

Hostility towards agricultural biotechnology by French policy makers can have an impact on France's domestic policy and on the positions France is taking at European instances.

At the domestic level, France's Minister of Agriculture, Stephane Le Foll, clearly indicated at the Parliamentary hearings on the Searlini study his reluctance towards agricultural biotechnology. He opined that, whatever the conclusions of the competent authorities on the Seralini study, the rules regulating GE products in the European Union need to be changed. He considered that the GE crops currently available to farmers (herbicide tolerant and insect resistant) do not contribute to sustainable development, while France must become a leader in agroecology.

“Let's Produce Differently” (in French, “Produisons autrement”) is the main slogan of the recently appointed Agricultural Minister, with a dedicated [website](#) that mainly focuses on agroforestry, organic agriculture, biodiversity, protected geographical indications, water quality and livestock feeding independent from imports. A national conference on these topics is planned on December 18. It is unlikely that plant biotechnology will be addressed in this conference.