

In defense of scientific discourse and competing expertise

Support to Gilles-Eric Séralini and his co-authors

The discourse between researchers within the scientific community is a key driver of knowledge construction. To be recognized as valid, a result should resist all fair attempts of invalidation by colleagues.

Furthermore, when scientific studies have important social, health, economic and political consequences, a scientific discourse with pluralistic expertise becomes even more essential for a well-functioning democracy. Yet, when certain scientific perspectives are systematically excluded from this discourse, how can we be assured of good science and policy outcomes?

In the case of genetically modified (GM) plants and their systematic scientific appraisal, this respect for the scientific critique has been consistently under siege. A troubling trend is unfolding, where researchers who publish results that suggest unintended and potentially negative effects on health or the environment become the target of aggressive discrediting campaigns from influential members of the scientific community.

Despite the long tradition of discourse and dissent playing an important role in science and democracy, France is not immune to this troubling development within the scientific community. The current situation of Gilles-Eric Séralini, professor of molecular biology at the University of Caen and co-director of the multidisciplinary centre "Risks Pole" (MRSH-CNRS), which specializes in risk research of GMOs and pesticides on health, is a case in point. Séralini and his colleagues have undertaken counter-appraisals of data delivered originally by Monsanto to justify the commercialization of three different GM maize lines (MON 863, MON 810, NK603). The re-analyses by Professor Séralini and colleagues question the reliability of Monsanto's data to formally prove the safety of these three GM maize lines (inadequacies in methodology, lack of robustness in statistical analysis). Unlike the research performed by the company, the work of Professor Séralini and colleagues has been subject to rigorous evaluation by peers before being published in the scientific literature in particular in 2007 and 2009.

The findings by Professor Séralini's research team question the validity of authorizations granted by the European Commission, given on the advice of the European Food Safety Agency (EFSA) for human and animal consumption of these three maize lines. Given the implications of this counter-appraisal for Monsanto's commercial interests, the intense reactions from Monsanto, are perhaps unsurprising. However, EFSA and the Office of Food Control in Australia and New Zealand's critiques should have been more balanced. Further, the nature of their response has contributed to a discrediting campaign from certain linked sectors of the scientific community (see overleaf) which threatens not only Professor Séralini's livelihood as a scientist, but also his funding to continue public-good research. This is wholly unacceptable.

We, academics, professors and researchers signing this statement, consider it our responsibility to defend the principles of respectful scientific criticism and the use of pluralistic expertise on issues as sensitive, complex and potentially irreversible as the effects of released GM crops. We denounce the approach of our colleagues, who use defamation and flawed/biased logic rather than credible scientific grounds, to unfairly and unjustly argue their case. We uphold that such a debate should be conducted as a transparent discourse subject to an extended assessment by peers.

We give our full support to GE Séralini and his co-authors.

The work of GE Séralini and his colleagues in its context

The scientific publication “A Comparison of the Effects of Three GM Corn Varieties on Mammalian Health”, where Professor Séralini is the corresponding author, is a counter analysis of data produced by Monsanto. The availability of the data used by Professor Seralini’s team is partly the result of a court order, where the confidentiality of a part of the data was deemed illegal by a German court. The released Monsanto data was a study on rats fed for 3 months with the three maize lines under regulatory consideration. As emphasized by Professor Séralini and co-workers in their articles, in their analysis they do not make claims of evidence of chronic toxicity of the GMOs under study, because the experimental design of the feeding trial by Monsanto contain too numerous deficiencies to allow to draw robust conclusions. What Professor Seralini and colleagues describe, however, is that warning signs are present in the data, which may lead to the development of a chronic condition and therefore strongly merit further inquiry. In other words, they refute the ability of the data provided by Monsanto to formally and scientifically demonstrate the safety of the three GM maize events under investigation, given the poor study design and lack of statistical robustness of the chosen methodology.

Incomprehensibly, the French Association of Plant Biotechnology (AFBV), chaired by Marc Fellous, Professor of Genetics and former president of the Biomolecular Engineering Commission (a governmental commission to assess agricultural GMOs, where Professor Séralini was a member from 1998 to 2007), supported by well-known professors like Claude Allegre and Axel Kahn, stated in a press release dated from December 14, 2009, that "The work of Professor Séralini has been invalidated by the scientific community." These allegations are totally false and have no basis. Not only has all of the work conducted by Professor Séralini and colleagues been published in international journals after rigorous peer review by anonymous referees, but also none of their work has been subject to any science-based or formal means of invalidation.

Following the participation of Professor Séralini in the TV show *Health Magazine* on January 21, 2010, on the French TV channel France 5 (where he was invited to talk about his latest study), the same AFBV sent two letters (dated 26 and 28 January) to managers of the channel and the show, including the High Audiovisual Council, resorting to name-calling by describing Professor Séralini as a "merchant of fear" and a scientist not recognized. It would seem that members of the AFBV, declaring themselves all in favor of GMO, are acting more as a political group rather than as scientists.

Moreover, in January 2009 and 2010, the expertise of Professor Séralini was solicited for the Supreme Court of India where the Indian Government had requested the reviewing of the raw data of the Mahyco company’s safety studies conducted to gain approval for commercialization of a new GM eggplant (Bt brinjal), producing an insecticidal toxin. Based on this review, which included a range of other experts, a moratorium was established. Since then, Professor Séralini has been repeatedly the subject of defamatory attacks extending far beyond any scientific discourse and without any scientifically supported justification or merit. Such attacks fundamentally undermine the principles of due scientific discourse and fairness of an open society.

You will find in the appendix:

Article of Spiroux de Vendômois, et al. « *A Comparison of the Effects of Three GM Corn Varieties on Mammalian Health* ». *Int. J. Bio. Sci.*, 2009, 5 : 706-726

Response of Monsanto to this paper

View of Comité Scientifique du Haut Conseil des Biotechnologies

View of l’Office de contrôle des aliments d’Australie et de Nouvelle-Zélande (FSANZ)

View of EFSA

Press release of the Association Française des Biotechnologies Végétales (AFBV)

Response of the authors to the various critics