

## Research on genetically modified foods: Double standards of transparency

Dear Editor:

In Canada, there has been a significant increase in the production and consumption of genetically modified foods such as canola, corn and soya. More than 10.4 million hectares of Canadian land are now used to grow genetically modified organisms.<sup>1</sup> Yet, there is still much debate concerning the risks of eating genetically modified foods. Séralini and his colleagues<sup>2</sup> published a highly publicized article claiming that genetically modified foods caused severe health problems. Results suggested that Roundup-tolerant genetically modified maize given to mice increased their risks of mortality, tumours, sex hormonal imbalance, liver congestions, necrosis, kidney nephropathies and kidney chronic deficiencies. However, in November 2013, the editor of *Food and Chemical Toxicology* announced that the article was retracted due to the small sample size and the strain of mice used.<sup>3,4</sup> The editors had received numerous letters expressing concerns about these methodological flaws. After reviewing the original data, the Editor-in-Chief found no evidence of fraud or intentional misrepresentation. The retraction of the article came as a surprise to some members of the scientific community because the article had passed a rigorous peer-review process.

Regardless of whether we agree or disagree with the validity of Séralini's study, it provides a valuable lesson regarding the importance of transparency in research on genetically modified foods. Evaluations by small groups of reviewers may be deemed incomplete or erroneous by other experts. This case highlights that transparency, access to original data and post-publication review are important to increase the probability that scientific methods and results are valid and well interpreted.

Although transparency is an important standard within the scientific community, it is still lacking from the Canadian government's evaluation process of risks associated with genetically modified foods. To evaluate the safety of genetically modified foods, Health Canada reviews scientific documentation developed and submitted by private companies such as Monsanto.<sup>5</sup> No independent analyses are conducted and the scientific documentation is not published because of intellectual property rights.<sup>6</sup> Interestingly, this is not the case in the pharmaceutical industry where independent analyses can be conducted and published.<sup>6</sup>

Many researchers question the validity of the analyses conducted by private companies that have vested interests in minimizing health risks to maximize economic profits.<sup>6,7</sup> The absence of transparency, counter-expertise and dissemination of research methods and findings jeopardizes the legitimacy of the evaluation procedure. What would happen if the analyses conducted by private companies were published, as Séralini's research findings were? Would the results pass the test of post-publication review by the scientific community? Transparency should be required when evaluating the safety of interventions that impact the Canadian population's health. There should not be double standards regarding the level of transparency expected from the scientific community and from private companies in regards to genetically modified foods.

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