Assessment of the safety of foods derived from genetically modified (GM) crops

This paper provides guidance on how to assess the safety of foods derived from genetically modified crops (GM crops); it summarises conclusions and recommendations of Working Group I of the ENTRANSFOOD project. The paper provides an approach for adapting the test strategy to the characteristics of the modified crop and the introduced trait, and assessing potential unintended effects from the genetic modification. The proposed approach to safety assessment starts with the comparison of the new GM crop with a traditional counterpart that is generally accepted as safe based on a history of human food use (the concept of substantial equivalence). This case-focused approach ensures that foods derived from GM crops that have passed this extensive test-regime are as safe and nutritious as currently consumed plant-derived foods. The approach is suitable for current and future GM crops with more complex modifications. First, the paper reviews test methods developed for the risk assessment of chemicals, including food additives and pesticides, discussing which of these methods are suitable for the assessment of recombinant proteins and whole foods. Second, the paper presents a systematic approach to combine test methods for the safety assessment of foods derived from a specific GM crop. Third, the paper provides an overview on developments in this area that may prove of use in the safety assessment of GM crops, and recommendations for research priorities. It is concluded that the combination of existing test methods provides a sound test-regime to assess the safety of GM crops. Advances in our understanding of molecular biology, biochemistry, and nutrition may in future allow further improvement of test methods that will over time render the safety assessment of foods even more effective and informative.

General information
Publication status: Published
Organisations: Division of Toxicology and Risk Assessment, National Food Institute, Technical University of Denmark
Pages: 1047-1088
Publication date: 2004
Peer-reviewed: Yes

Publication information
Journal: Food and Chemical Toxicology
Volume: 42
Issue number: 7
ISSN (Print): 0278-6915
Ratings:
Scopus rating (2004): SJR 0.877 SNIP 1.15
Web of Science (2004): Indexed yes
Original language: English
DOIs:
10.1016/j.fct.2004.02.019
Source: orbit
Source ID: 247596
Research output: Contribution to journal › Journal article – Annual report year: 2004 › Research › peer-review