

Safety of genetically engineered foods - approaches to assessing unintended health effects

National Academies Press - BOARD ON LIFE SCIENCES

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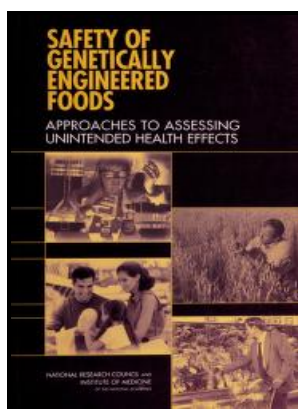
Food -- Biotechnology -- Safety measures.

Genetically modified foods -- Safety measures. Safety of genetically engineered foods - approaches to assessing unintended health effects

-Safety of genetically engineered foods - approaches to assessing unintended health effects

Notes: Includes bibliographical references.

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Tags: #Safety #of #Genetically
#Engineered #Foods #: #Approaches #to
#Assessing #Unintended #Health #Effects.
#(eBook, #2004) #[sdk.mavlink.io]

7 Framework, Findings, and Recommendations

Surveillance after a food is on the market might also be needed in some cases.

Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects

The following examples illustrate how newly modified organisms would proceed through the process presented in the flow chart, using hypothetical scenarios to illustrate the application of various approaches. The immediate isogenic progenitor line is an appropriate comparator; however, the role of environmental factors on composition must be considered.

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

The most appropriate time for safety assessment of all new food is in the premarket period prior to commercialization, although verification of safety assessments may continue in the postmarket period, generally in cases when a potential problem has been identified or if there is elevated cause for concern. Approach to the Task The committee approached its task by gathering information from existing literature and from public workshop presentations by recognized experts see for the workshop agendas and then deliberating on issues relevant to their charge. Health outcomes could be associated with the presence or absence of specific substances added or deleted using genetic modification techniques, including genetic engineering, and with unintended compositional changes.

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Postmarketing surveillance is an approach to verify premarket screening for unanticipated adverse health consequences from the consumption of GE food. In another example, GE rice that expresses a soybean gene but carries no substance new to the species or to the food supply would proceed from Box A through Box C, as in the wheat example above.

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Alternatively, a GE soybean that expresses a daffodil gene to enhance production of beta-carotene does warrant additional evaluation because the expression of beta-carotene, a precursor to an essential micronutrient, is substantially enhanced Box E, even though it is not a novel substance in the food supply. Traditional methods include selection and crossbreeding, while more contemporary techniques include embryo rescue, cell fusion, somaclonal variation, mutation breeding, and cell selection. In this book, the committee recommended that greater scrutiny should be given to foods containing new compounds or unusual amounts of naturally occurring substances, regardless of the method used to create them.

Safety of genetically engineered foods : approaches to assessing unintended health effects : Institute of Medicine (U.S.). Committee on Identifying and Assessing Unintended Effects of Genetically Engineered Foods on Human Health : Free Download, Borrow, and Streaming : Internet Archive

The likelihood that an unintended compositional change will occur can be placed on a continuum that is based on the method of genetic modification used. The book offers a framework to guide federal agencies in selecting the route of safety assessment. Additionally, predictive tools to identify the expected behavior of complex and compound structures are limited and require a priori knowledge of their chemical structure, their biological relevance, and their potential interactive targets.

Executive Summary

Text will be unmarked and pages crisp.

1 Introduction

These should include mean values and ranges that typically occur as a function of genetic makeup, differences in physiological state, and environmental variables. Additionally, predictive tools to identify the expected behavior of complex and compound Recommendation 4 The committee recommends the development and employment of standardized sampling methodologies, validation procedures, and performance-based techniques for targeted analyses and profiling of GM food performed in the manner outlined in the flow chart shown in. As a result, pharmacologists accept postmarket surveillance as a part of the process to identify unexpected adverse outcomes from their products.

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