

also resources about risks and concerns, as well as a biotech news page with short summaries and links to stories.

Seven Academies of Science Report on Transgenic Plants and World Agriculture

Seven academies of science recently released a report describing the potential of agricultural biotechnology for alleviating hunger and poverty in the Third World. The report also discusses obstacles to use of genetically modified plants. The Working Group on Transgenic Plants and World Agriculture included 22 scientists from the U.S. National Academy of Sciences, Royal Society of London, Brazilian Academy of Sciences, Chinese Academy of Sciences, Indian National Science Academy, Mexican Academy of Sciences, and Third World Academy of Sciences. The Working Group called for developers and overseers of GM plants to ensure that their efforts reduce world hunger, while minimizing environmental impacts and providing productive employment in low-income areas.

The following citation also provides a website to access this report:

Royal Society of London, US National Academy of Sciences, Brazilian Academy of Sciences, Chinese Academy of Sciences, Indian National Science Academy, Mexican Academy of Sciences, and Third World Academy of Sciences. 2000. Transgenic plants and world agriculture.
<http://Ibooks.nap.edu/html/transgenic>

New Database for Assessment of GMO Food Allergens

Before they are commercialized, it is necessary to assess the safety of transgenic food products, including evaluation of whether these new products are allergenic in humans. The Agricultural Molecular Biology Laboratory (AgMoBiol), of the Peking University Protein Engineering and Plant Genetic Engineering Laboratory, has created a database of food allergens. This database can be used to compare amino acid sequences of transgenic foods and known food allergens. This information can assist in deciding whether transgenic foods may contain food allergens. This database also provides relevant literature references and experimental techniques to study food allergens.

The International Food Biotechnology Committee and the Allergy and Immunology Research Center of the International Institute of Life Sciences have drafted a set of tree-shaped analysis methods for studying the allergic attributes of genetically modified foods. With the development of genome and protein bioinformatics research, and the understanding of GMO food allergen attributes, resource materials are expected to accumulate quickly in the new food allergen database. This database has now collected over 20 food allergen epitope amino acid sequences. Other food allergen amino acid sequences will be added as they become available.

Whether transgenic food can induce allergic reactions may depend on whether protein products of the transgenes can be digested or degraded rapidly in the human digestive system. The AgMoBiol laboratory has tested 10kD zein, 15kD zein, and isopentenyl transferase protein products in transgenic potatoes. The experimental methods are accessible from the database, as well as techniques (for instance, RAST inhibition test) for testing transgenic protein immunological properties related to some allergens.

This database was prepared cooperatively by the AgMoBiol at National Lab of Protein Engineering and Plant Genetic Engineering, Peking University and Allergy Department of Peking Union Medical College Hospital. Contributions to this database are welcome.

The website is: <http://ambl.lsc.pku.edu.cn>

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