

PRESS RELEASE

Allergy fears from new foods

Istanbul/Zurich, 15 June 2011 - People who suffer from - or have a genetic predisposition to - allergies may face new risks from GM foods and new varieties of fruit and vegetables, say experts from France and Austria today. The challenge for scientists is to assess the risk and prevent the numbers of people with food allergies increasing.

"The development of genetically modified plants (GMPs) and foods derived from those plants is rapidly increasing worldwide," said **Dr Jean-Michel Wal** from INRA, the French National Institute for Agricultural Research, during the 30th Congress of the European Academy of Allergy and Clinical Immunology (EAACI) in Istanbul. Food allergies are thought to affect up to three per cent of the adult population and between six and eight per cent of children.

Most GMPs are currently grown to generate a characteristic in the plant such as insect resistance or herbicide tolerance. Other GMPs, in which the composition has been substantially modified, may claim increased nutritional value. Inserting the transgene may produce unintended effects due to interactions with plant's own genes.

The risk to the environment and human and animal health will always be assessed before GMPs are authorised for sale and consumption. Safety – and especially the risk of allergy - is a crucial issue, addressed by guidelines in national and international regulations from, for example, the European Food safety Authority (EFSA) and the Codex Alimentarius/FAO-WHO (World Health Organisation).

The risk of new sensitisation in people with a genetic predisposition to allergy, as well as an allergic reaction in people who are already sensitised to certain allergens, must be evaluated before the new GMP is approved for human and animal consumption. Speaking at the European Academy of Allergy and Clinical Immunology, Professor Wal said, "This situation is completely new – we have no history of allergy to genetically modified foods and the potential for allergy should be assessed case-by-case." How digestible newly expressed proteins in the GMPs are and how they may interact with a person's immune system must be investigated.

The fact that a newly expressed protein in the GMP belongs to a plant protein family known to include many allergens does not necessarily mean the GMP will produce an allergic reaction. A comprehensive series of tests on novel proteins and plants must be conducted to determine the risks of allergy. Although new analytical technologies, cell based tests and animal studies in the laboratory have not yet been validated for regulatory purposes, they may provide useful information.

"The plant or food product must be tested to ensure that the potential for allergy has not been enhanced due to the genetic modification that has changed the overall composition of the plant, now and in future generations of GMPs," said Professor Wal.

It is not just GM foods that could increase the risk of allergy. Proteins found in new varieties of fruit and vegetables, such as kiwi fruit, may cause mild, unpleasant symptoms to severe life-threatening reactions. Understanding the action of separate proteins could improve the quality of life for people who have to avoid certain foods.

Dr Karin Hoffmann-Sommergruber, from the Medical University of Vienna, Austria, has studied individual purified kiwi proteins which have helped to increase sensitivity of the diagnostic test for kiwifruit allergy. "We can now discriminate between sensitisation to single and multiple kiwifruit proteins," she said. "This helps us to fine-tune our advice to patients and their dietary management."

Another important allergenic protein family is the 2S albumins found in seeds and nuts, but these proteins seem to produce different allergic effects depending on the species. While they are the major allergens in peanut, their effects seem to be much less in seeds from sesame or walnuts.

"Since there is no treatment available yet, we usually tell patients to avoid the food completely. Therefore, precise diagnosis of food allergy is needed to advise the patient accordingly," said Dr Hoffmann-Sommergruber. Testing for specific allergens, a technique known as 'Component resolved diagnosis' instead of whole food testing, has contributed significantly to a person's diagnosis which has helped to improve their quality of life.

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Publications: Bublin M, Pfister M, Radauer C, Oberhuber C, Bulley S, Dewitt AM, Lidholm J, Reese G, Vieths S, Breiteneder H, Hoffmann-Sommergruber K, Ballmer-Weber BK.

Component- resolved diagnosis of kiwifruit allergy with purified natural and recombinant kiwifruit allergens. *J Allergy Clin Immunol*; 125:687-94, 94 e1.

About EAACI :

EAACI - The European Academy of Allergy and Clinical Immunology is a non-profit organisation active in the field of allergic and immunologic diseases such as asthma, rhinitis, eczema, occupational allergy, food and drug allergy and anaphylaxis. EAACI was founded in 1956 in Florence and has become the largest medical association in Europe in the field of allergy and clinical immunology. It includes 6'500 members from 107 countries, as well as 41 National Allergy Societies.

Throughout 2011, EAACI will develop different activities to celebrate the 100th anniversary of immunotherapy in Allergy, which will aim at increasing the knowledge in this field among healthcare professionals, increase awareness in the general population, and finally, promote the availability of immunotherapy for allergic patients.



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