

Re-examining Food Labelling Legislation in the Context of Emerging Allergens; Cross Contamination and Seed Storage Proteins.

Food allergy is an important health issue due to the potential for severe and life threatening reactions. The most appropriate risk management option for food allergens is rigorous declaration requirements since, even in small amounts; the allergen may trigger allergic reactions.

Allergy Alive, a non-profit organization, wants to consider in the context of South African public, improvements to existing regulatory approaches, which allow consumer choice yet do not compromise the safety of allergic consumers.

Whilst there are specialist medical professionals in the field, the arena of the allergic consumer **must** be considered. Allergy Alive deems essential, an openness to emerging opinions into regulatory and non-regulatory approaches to food allergens, if we are to match international standards in allergen control and create a safe environment for our allergic community, even in the a context where prevalence rates are lacking at this point.

- a. New food allergens emerge that need to be considered for inclusion in the list for mandatory declaration. It seems however there is a resistance to acknowledge this and these allergens remain minimized and deemed 'minor allergens' in the discourse. The problem in South Africa is that there is a lack of scientific data collection regarding statistics and prevalence, and whilst this is necessary it will take much time, a part of which may see the event of tragic results should these not be considered currently. There is enough anecdotal data in our community and within our schools where children and adults have been medically diagnosed with sesame seed and seed storage protein allergies to understand the dire need for this to be addressed by our South African legislation. In December a South African female teacher travelling to Israel, died after eating sesame seed food in an Israeli restaurant.
 - a. **ALLERGENIC POTENCY** is essential in understanding the allergenic nature of a food. How much of a food is required to cause an allergic reaction and how severe the reaction is, are features that reflect the allergenic potency of the food (Bjorksten et al, 2008, cited in Food Standards Australia and New Zealand, 2010).
 - b. **CROSS REACTIVITY** occurs among food proteins, particularly structurally similar or biologically similar related proteins. The IgE antibodies specific to one protein may bind to a similar protein in a different food.
 - c. According to WHO 2000, the Codex Alimentarius Commission developed an ad hoc panel on food allergy that recommended the addition of a food to the

list of common allergenic foods should be based on medical evidence that the food causes systemic reactions with typical features of allergic reactions and if available, prevalence data in children and adults in several countries. The guiding principle is that the inclusion on the list should be determined by the public health significance of the food allergen of concern. Currently there is a lack of systematic data collection on the frequency of allergic reactions to food in South Africa, but there certainly are growing clinical cases that prove the severe potency of these various new allergens.

b. One cannot blind oneself to medical information on the following:

Dr Cathy Van Rooyen (Review Article, 2014), and authors in The Food Standards Australian New Zealand (2010), recognize the seriousness and significance of a SEED STORAGE PROTEIN ALLERGY. Storage proteins are the dominant allergens in seeds, fruit pips and nuts. Sensitization to storage proteins is an important high risk marker for severe systemic reactions. Cross reactions are often observed between unrelated nuts and seeds. These proteins are heat stable and therefore patients will react to cooked and processed foods. Dr Van Rooyen states that sensitization to storage proteins is regarded as an important risk factor for severe systemic reactions, particularly if there is a sensitization to more than one storage protein. Furthermore, The 2s albumin seems to be the main allergen with the greatest risk for severe systemic reactions and is found in tree nut, seed and peanut allergies.

FAACT (2014) states that sesame consists of *several major allergen classes*, including seed storage proteins, vicillins, and oleosin. There may be differing amounts of allergens contained among the 3 varieties of sesame seeds. White sesame seeds contain the most allergen compared to brown or black seeds. However, all seeds are allergenic. Sesame oil is considered highly allergenic, as is sesame flour. Because sesame is a seed and has evolved from a plant, there are *common proteins shared between other seeds, peanut, tree nut, and certain plants (in particular plants used for spices)*. *Common proteins are even noted with carrot and kiwi.*

If cross reactivity and allergenic potency are key factors in understanding what is to be considered a common allergen, what might it be that seeds like sesame seeds, legislated allergenic in the EU, Canada, New Zealand, Australia, are minimized in South Africa, especially in light of the new scientific data regarding the seed storage protein allergy. How many deaths do we need before this is to be taken seriously?

- c. Moreover, severe allergic reports to lupin have been reported in the medical literature since 1994. ALLSA sent out an urgent attention report of a woman with a severe reaction to lupin in an ice-cream cone in Cape Town this year, 2014. The symptoms of lupin allergy are typical of severe Ig-E mediated allergic reactions and cases of lupin anaphylaxis have thus been reported. Lupin protein shows a cross reaction with peanut and other legumes.

Lupin has a high protein and dietary fiber and low fat content and therefore attractive for human nutrition. It can be used in pasta, bread and bakery products. Even dairy substitutes, sausage fillings, vegetarian sausage fillings, emulsions for salad dressings, baby food, diet products, taste and scent transporters, and even lupin Ice cream.

Whilst there might be politics behind food labelling, it begs the question “how long do our children and adults, allergic to seed storage proteins, lupin, legumes and the like, have to wait before being able to go to the shops and buying food safely?”.

It might be simpler if one has an allergy to a single food: neat, simplified and boundaried. And despite the debilitating effects that may have, it is a lot easier when one can choose a food and make an informed decision based on a mindful food label that serves to protect the consumer. But when complex issues are disregarded, swept away under ‘those are minor’; when issues of cross contamination to various foods and food families go unrecognized; when data around emerging allergens is undermined, when the context has a lack of prevalence statistics, what then ?

How long should these families wait to have an environment that will act in their best interests, to normalize their lives just a little ? One cannot ignore the identification of new allergens, new understanding of allergy components and the importance there of in the context of food regulation.

References

1. Dr Cathy Van Rooyen (In New Laboratory Methods in Diagnosing Allergic Disease, Part 11-Where Are We Going? Current Allergy and Clinical Immunology, 2014, March Vol. 27 No.1).
2. Food Allergy and Anaphylaxis Connection Team, FAACT, (2014).
3. Food Standards Australia New Zealand, 2010