



September 2006

Initial Assessment Report

Application A555 – Declaration of antioxidants in fats and oils

The DAA does not support the progression of this application to Draft Assessment.

The DAA is fortunate to have a number of experts in the area of food chemical intolerance in its membership and the DAA Food Standards Advisory Committee was able to obtain a general consensus regarding this application from the DAA National Interest Group on Food Allergy and Intolerance.

Food chemical intolerance symptoms do occur, in an unknown number of individuals, to antioxidants such as those listed in the application. The symptoms vary between individuals and can involve any of the major systems in the body – central nervous, gastrointestinal, respiratory (excluding asthma) or cutaneous.

The method of elucidating sensitivity to these chemicals involves dietary elimination and reintroduction either through foods containing added antioxidants or by double-blind, placebo-controlled (DBPC), capsule challenges. According to the method of dietary elimination and food chemical challenge developed by Royal Prince Alfred Hospital Clinic, the dose used for a DBPC antioxidant challenge is 50 mg comprising 25 mg BHA and 25 mg BHT.¹ This dose was derived from early investigations into food chemical intolerance² and experience over the past 27 years has shown this dose to be appropriate in distinguishing those patients who are sensitive to these antioxidants.

To determine the maximum amount of an antioxidant that would be contained in food if the ingredients of an ingredient did not have to be stated, a calculation was made using the maximum amount of antioxidants allowed in the Code. The results showed that, in order to consume 1 mg of tBHQ or BHA, 100 g of a food with an ingredient comprising 5% of the final food would need to be eaten. With respect to propyl gallate, octyl gallate, dodecyl gallate or BHT, 200 g of a food would need to be eaten. This means that, in order to consume the challenge dose of 50 mg, 5 – 10 kg of a food, with an ingredient comprising 5% of the final product and containing the maximum allowable antioxidant, would need to be eaten.

It is thought that 100 – 200 g of a single food is not an unreasonable quantity to assume would be eaten at a time, but it would be extremely unusual for a patient sensitive to any

of these chemicals to react to the amount of antioxidants that would be unlabeled in these foods, which is at most 1 - 2 mg. Even if a person was to consume five or ten times the amount in various foods over a day, it would not reach half the challenge dose. There may be some consumers who will experience irritating, but not life-threatening, reactions at these low doses but, in the experience of those involved in the area, reactions are much more likely to occur when a food is labeled with added antioxidants (indicating a higher dose) and with unpackaged foods such as take-away or restaurant meals which are almost always cooked in oils containing antioxidants.

Currently, there are exceptions to the exemption from ingredient labeling for ingredients in compound ingredients and these listed in the table to clause 4 of Standard 1.2.3. However, all of these foods or food additives have the potential to cause serious or life-threatening reactions in sensitive individuals. To our knowledge, there have been no reports of serious, life-threatening symptoms such as asthma or anaphylaxis with any of these chemicals. In a report of two cases of confirmed sensitivity to BHA and BHT, the dose used for challenge was 125 mg and 250 mg respectively. Neither subject had life-threatening symptoms as a result of the antioxidant challenges in spite of both subjects having a history of asthma and/or angioedema.³

If this application were approved, it would cause hardship for manufacturers and would benefit few, if any, food sensitive individuals. It would also add to the list of ingredients which has the potential to further confuse the public.

The DAA recommends that this Application should not progress to Draft Assessment as it is believed that there will be little or no benefit to the population and it will delay consideration of more important issues.

REFERENCES:

1. Loblay RH, Swain AR. Food intolerance. *Recent Advances in Clinical Nutrition*. 1986;2:169-177
2. Juhlin, L. Recurrent urticaria: clinical investigation of 330 patients. *Br J Dermatol*. 1981;104(4):369-81
3. Goodman DL, McDonnell JT, Nelson HS, Vaughan TR, Weber RW. Chronic urticaria exacerbated by the antioxidant food preservatives, butylated hydroxyanisole (BHA) and butylated hydroxytoluene (BHT). *J Allergy Clin Immunol* 1990;86:570-5