Risk characterisation

In this guide

30. For lectins, EFSA agreed that a health-based guidance value (HBGV) would not be suitable as the available information on both toxicological and occurrence data were not sufficient. Hence, a margin of exposure (MOE) approach was applied. An MOE of 100 was considered to be safe as it would account for animal and human differences, as well as differences between humans.

31. Based on the limited data available on plant lectins, EFSA considered PHA the most toxic of the lectins of edible plants due to its specificity to bind complex glycans containing a bisecting N-acetylglucosamine and its high affinity to human enterocytes. Hence, the risk characterisation was performed on PHA only.

32. A BMDL10 value of 22.9 mg/kg bw/day for an increase in small intestine dry weight was selected from a study by Bardocz et al. (1995) to use as the reference point for PHA. EFSA calculated an MOE of 0.3 based on the BMDL of 22.9 mg/kg bw/day and the highest percentile exposure of 75.8 mg/kg bw/day (from the consumption of ‘beans and vegetables meal’ in the category ‘other children’).

33. The MOE (0.3) for PAH was below the MOE considered to be safe (> 100). therefore, at a level of 50% deactivation of PHA would be considered a health risk. As no sufficient toxicological data was available for other lectins, no conclusions on their risk could be reached. However, EFSA agreed that for foods that had been prepared in line with adequate food preparation, there was no health concerns from exposure to deactivated lectins.