

Advice 18-2015 of the Scientific Committee of the FASFC on the exposure of the Belgian population to residues of plant protection products between 2008 and 2013 through the consumption of fruit and vegetables

Between 2008 and 2013 about 11,000 samples of fruits and vegetables, cereals and other products of plant origin (e.g. tea) were controlled by the FASFC for the presence of 400 to 500 residues of plant protection products. On average 95% of the analyzed samples were compliant with the legal limits and no residues were detected in about 30 to 40% of the samples.

Based on these control results, the chronic or long-term exposure of Belgian consumers to residues of plant protection products through the consumption of raw fruits and vegetables was evaluated over several years. Hereto, 34 residues were selected from the available data based on their detection frequency and representativeness. The exposure was estimated according to a deterministic approach. For each selected residue an overview is given of the estimated exposure in combination with the volume sold in Belgium and the detection frequency in raw fruit and vegetables on the Belgian market during the period 2008 - 2013.

The estimated average exposure of the adult consumer (≥ 15 years) to each of the 34 evaluated residues appears to be lower –and even up to 100 times lower for the majority of the evaluated residues - than the toxicological reference value, namely the “acceptable daily intake” or ADI. Even for persons who consume relatively large amounts of fruit and vegetables (i.e. based on the 97.5 percentile or P97.5 of consumption, which is a marked overestimation since it is assumed implicitly that large portions of all foods that all contain residue, are consumed daily by one person) the estimated exposure to the majority of the residues is still 10 to 20 times lower than the ADI. The highest average and P97.5 exposure are observed for dimethoate, namely up to 10% and 78% of the ADI respectively. However, due to the relatively low detection frequency in combination with the proposed residue definition for the chronic risk assessment of dimethoate (the total level is namely expressed as “the sum of the dimethoate level and 3 times the level of the metabolite omethoate”), these values should be nuanced, as is illustrated in the advice.

Given that the scientific knowledge is currently insufficient, the potential risk of the combined effect (additive, synergistic or antagonistic) of exposure to multiple residues simultaneously in the same food (i.e. cumulative risk assessment) on health was not considered.

A number of possible trends observed between 2008 and 2013 with respect to the volume sold, the detection frequency and the estimated exposure of the selected active substances are additionally discussed. However, these should be interpreted with caution, amongst others because of the relatively short time period considered and because the sampling basket, which contains a wide range of both domestic and imported products, is not the same each year. Moreover, there is no direct correlation between the quantity sold of an active substance, the detection frequency of and the exposure to the residue.

The full text is available on this website in dutch and in french.