

Advice 18-2016 of the Scientific Committee of the FASFC on the evaluation of the FASFC's analysis program in regard to pesticide residues

Background & Terms of reference

Each year, the Federal Agency for the Safety of the Food Chain Safety (FASFC) monitors the pesticide residue level in more than 3,900 samples of food, feed and water. These controls or analyses are pre-programmed according to a general risk-based method developed within the Agency. First, the relevant pesticide residues are identified (i.e. the hazards to be controlled) as well as the groups of products (i.e. the populations) that are potentially contaminated and therefore might pose a food security risk. Subsequently, the number of analyzes is determined to detect a minimum percentage of non-conformities with a certain reliability, and this on the basis of a score (i) for the severity of the harmful effect of the pesticide residue to be controlled, (ii) for the occurrence of the residue in the group of products to be controlled, which is based on the exceeding frequency of legal limits, and (iii) for the contribution of this group of products to the total food chain contamination or to the exposure.

The Scientific Committee is asked to evaluate the approach followed for the application of this method for programming the analyses of pesticide residues, and this in the framework of

1. the annual control program, particularly with regard to the criteria used for (a) the score of the harmful effect of the pesticide residues to be controlled, (b) delimiting the matrices into groups or populations, and (c) selecting the pesticide residues to be analyzed within a population (i.e. the pesticide profile);
2. a multi-annual sampling program, which mainly aims at estimating the exposure of the Belgian population, and more particularly, (a) if the same approach can be used as for the annual control program, specifically with respect to the delineation of the populations, and (b) to what extent the results of the annual control program are complementary to the results of a multi-annual program to estimate the exposure of the Belgian population.

Methodology

The evaluation of the approach is primarily based on expert opinion and scientific information available in the 'EU Pesticides Database' of the European Commission and the 'Pesticide Properties Database' from the University of Hertfordshire amongst others.

Conclusions

In the current approach used for the annual programming of the controls of pesticide residues, the criteria for the attribution of a score to the above mentioned parameters differ depending on the matrix considered, namely food of plant origin (including animal feed), food of animal origin and water. Since these types of matrices are programmed by different experts of the Agency, due to differences concerning the sectors related, legislation, policies, etc., they are discussed separately in the opinion. Nevertheless, for the application of the risk-based methodology as similar as possible criteria should be pursued for these matrices.

The Committee formulates the following general recommendations regarding the criteria used for:

a) the score of the harmful effect of the pesticide residues:

Regarding the programming of the controls of food of plant and animal origin, feed and water, it is proposed to allocate the score of the harmful effect of the pesticide residues on the basis of the "acceptable daily intake" (i.e. the ADI value) and where appropriate, to increase the score by one unit depending on the value of the "acute reference dose" (or ARfD). A scale for the score of the severity of the harmful effect is proposed in the opinion.

b) determination of the group of matrices to be controlled (i.e. the population):

A further division or differentiation of the groups of matrices to be controlled is possible, but does not seem necessary in the current approach. An exception is the population "water, not intended as beverage", for which a separate population "surface water" is recommended. Regarding the matrix "water", it is additionally recommended to consider, depending on the type of water, an increase of the score for the occurrence of contaminations in water as well as for the contribution of water to the total contamination.

c) the pesticide residue profile to be analyzed:

Besides the control results of the Agency, other information is taken into account for determining the pesticide residues that have to be analyzed by the laboratories in a given population. Nevertheless, the results of the water analyzes carried out by the regions do not appear to be taken sufficiently into consideration for the determination of pesticide residues that have to be analyzed in the different populations "water".

The results derived from the annual control program can be used to estimate the exposure of the population in the context of a risk assessment. If there appears to be an important risk for the consumer, or if a further refinement of the estimation is desired, a complementary, multi-annual program might be considered to obtain a representative sampling basket. The modalities of a multiannual program are not discussed in the present opinion as they require a separate, more profound study.

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