



Opinion 06-2023 of the Scientific Committee established at the FASFC on the assessment of the new method implemented by the FASFC to develop its multi-annual program of analyses relating to the safety of the food chain.

Question

The Scientific Committee has been asked to assess the new method implemented by the FASFC to develop its multi-annual program of analyses relating to the safety of the food chain. In particular, it is requested to analyze the following elements: the criteria, including scores, risk management classes, as well as the statistical principles applied to determine and adjust the number of food chain safety analyses in the baseline and the themes.

Background

The new programming method (= 2023 method) consists of determining a multi-annual basis of analyses (baseline) and annual sets of analyses (themes). The baseline includes all analyses required/recommended by the legislation as well as all hazard/matrix combinations considered necessary to guarantee food safety or covering subjects qualified as essential. The themes are annual analysis programs that reinforce or complete the baseline.

In the baseline, when the analyses are programmed on the basis of a risk assessment (risk code = exposure x severity), the 2023 method combines the same three criteria as before, but differently: "Occurrence x Contribution x Effect" *versus* "(Occurrence x Contribution) + Effect" for the 2006 method. Each matrix/parameter combination is evaluated according to these three criteria and for each of them a score ranging from 1 to 4 is assigned. The result is a risk code expressed on a scale of 1 to 64. By combining the three exposure levels (unlikely, likely, very likely) with the four severity levels, twelve risk classes are determined. The risk manager then arbitrarily reduced these into six risk management classes. Each class links two confidence levels to be achieved via sampling (95% and 99%) and three limit prevalences to be controlled (5%, 2.5% and 1%), and leads to a different number of analyses to be performed (from 59 for a not serious hazard and an unlikely exposure to 459 for a very serious hazard and a very likely exposure).

At the level of the thematic programs: either the baseline is strengthened and, then, we move up a higher risk management class and a number of analyses corresponding to the difference between the numbers of analyses determined for these two risk management classes is added; or the baseline is completed by adding an increasing number of analyses for the newly identified matrix/parameter combinations based on four detection levels (10%, 5%, 2.5%, and 1%, respectively for "not serious", "probably serious", "serious", and "very serious" hazards) and a constant 95% confidence level.

Method

The opinion is based mainly on the opinion of the experts combined with information from scientific literature.

Advice

The 2023 programming method includes a very large majority of the analyses (88% for the period 2023-2025) in a baseline (= multi-year program). This results in a very high stability of the analysis program over time. In turn, this stability makes it more feasible to observe and analyze trends in the analytical results generated by the implementation of the analytical program. The flexibility of the program is adequately ensured by possible ad hoc adaptations of the baseline (= basic program) as well as by the development and implementation of thematic (= annual) analysis programs that complement the baseline. The Scientific Committee is of the opinion that these thematic analysis programs should also be able to generate new data on food contamination. These data could then be used in matrix/food-specific risk assessments that can lead to the identification of management options to reduce the risk.

The 2023 programming method proposes a new formula for calculating the risk code and defines six risk management classes. In general, there is a tendency to increase the number of analyses to be performed as the risk code increases. However, the same risk code is sometimes associated with two or three different risk management classes and, consequently, with very different numbers of tests to be performed. The number of tests to be performed is therefore not always proportional to the risk. The Scientific Committee is of the opinion that this should be the case.

In general, there is a tendency for the confidence level to increase as the risk code increases according to the 2023 programming method. However, when comparing risk management class 5 with risk management class 2, the confidence level to be achieved is lower for the former than for the latter. Thus, the confidence level to be achieved does not always increase with risk. The Scientific Committee is of the opinion that this should be the case.

In terms of the number of analyses to be carried out, it can be seen that the 2023 method leads to a greater increase in the number of analyses the lower the severity and exposure, compared to the 2006 method. The Scientific Committee therefore suggests to adapt the 2023 method to include the logic followed by Maudoux et al (2006) and the 2006 method, i.e. the definition of four limit prevalences to be controlled for the four levels of severity of the hazard considered.

Uncertainties

The uncertainties in this opinion are those inherent to an expert opinion.

Conclusion

The Scientific Committee is of the opinion that, in the 2023 method for the development of the program of analyses, the number of analyses to be performed and the level of confidence to be achieved should be more proportional to the risk.

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