

Advice 23-2018 of the Scientific Committee of the FASFC concerning estimation of the risk to the consumer of *Bacillus cereus* in food

Background & Terms of reference

The Scientific Committee is asked on basis of which scientific elements the risk to the consumer can be estimated when high concentrations of *Bacillus cereus* (*B. cereus*) ($> 10^5$ CFU / g or ml) with toxin-forming property are found in food. The Scientific Committee is also asked on the basis of which criteria measures should be taken in connection to high concentrations of *B. cereus*. In addition, attention was also given to the safety of the use of *B. thuringiensis* as biopesticide.

Methodology

This advice is based on recent literature data, as well as on expert opinion. The recent scientific literature was analysed in a systematic way by means of a literature study and it was assessed whether new knowledge was available with regard to the risk for the consumer of *B. cereus* compared to the EFSA opinion from 2016 on *B. cereus* in food.

Result

The literature study did not provide any new insights compared to the EFSA opinion from 2016 with regard to the elements that allow to estimate the risks related to the presence of *B. cereus* in food, for vegetative cells, spores and toxins. For this reason, no new risk assessment was performed by the Scientific Committee for *B. cereus*.

In general, commercial *B. thuringiensis* strains used as biopesticide are considered as safe due to their long usage history. However, it remains important to assess the safety of these strains individually. At present there are no markers to easily differentiate these strains from other *B. cereus* strains.

Conclusion

Based on a literature study and expert opinion, the Scientific Committee did not find new scientific elements to better assess the risk of *B. cereus* in food. Therefore the Scientific Committee proposes, in view of the uncertainties, to use a pragmatic action limit for *B. cereus* (10^5 CFU/g or ml) and to take measures based on this action limit. The Scientific Committee also recommends sending food samples with high concentrations ($> 10^5$ CFU/g or ml) from suspected *B. cereus* to the reference laboratory for further identification at species level in order to gain further knowledge on the circulating strains.

In addition, the Scientific Committee would like to draw attention to the fact that not only certain strains of *B. cereus sensu stricto*, but also strains of other species from the *B. cereus* group, such as *B. thuringiensis*, *B. pseudomyoides* or *B. cytotoxicus*, can potentially pose a risk to food safety. The Scientific Committee recommends using the same action limit (10^5 CFU/g or ml) for the other species from the *B. cereus* group, such as *B. thuringiensis*, since no definite answer can be given about their infectious ability for humans. For *B. thuringiensis* strains, including the strains used as biopesticide, the same action limit also applies (10^5 CFU / g or ml). The Scientific Committee also recommends that the action limit for *B. cereus* and other species from the *B. cereus* group be re-evaluated, if sufficient new information becomes available. Finally, the Scientific Committee recommends sequencing the *B. thuringiensis* strains used as biopesticides and analyzing these strains for the presence of clinically relevant antibiotic resistance genes.

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