

Advice 09-2017 of the Scientific Committee of the FASFC on the re-examination of the microbiological stability of rice cakes after baking**Background & Terms of reference**

The Scientific Committee is asked to verify if, based on newly available scientific knowledge and data (including the results of the study project SP 2015-03 “Microbiological risks of rice cakes”), the original question that resulted in the advice 03-2015 “Evaluation of the microbiological stability of rice cakes after baking” (SciCom, 2015) can be answered with more certainty. The original question concerned the risk of the consumption of rice cakes after storage at ambient temperature during 12 hours. The Committee is also asked to evaluate the risk of the consumption of rice cakes after a cooled storage of rice cakes that were stored 12 hours at ambient temperature.

Methodology

Based on newly available scientific knowledge and data (including the results of the study project SP 2015-03 “Microbiological risks of rice cakes”), the international scientific literature and based on expert opinion, the Scientific Committee has performed a risk assessment of *Bacillus cereus* in rice cakes during a non-cooled storage.

Result

The Scientific Committee has assessed the risk of the consumption of rice cakes stored at ambient temperature. In the hazard identification, *Bacillus cereus* was identified as being the most important hazard caused by the consumption of rice cakes stored at ambient temperature given that this pathogenic agent is inherent to the raw materials of rice cakes and given that the spores can survive the baking process. *Bacillus cereus* can cause two types of illness syndromes, namely the diarrhea type, where, after the intake of high numbers of vegetative cells, enterotoxins are produced in the intestine, and the emetic type, where the preformed cereulide in the food is ingested. In the hazard characterization, it is stated that the infectious dose is 10^5 - 10^8 cells of *Bacillus cereus* per gram of food and 8-10 µg cereulide per kg body weight. In the exposure assessment, the contamination of the raw materials, the survival during the baking process and the contamination of rice cakes were described. Concerning the growth during storage, the growth parameters were calculated from the challenge test realized in the study project and growth simulations were realized (and growth parameters calculated) with the aid of ComBase. From a comparison of this growth parameters, it seemed that the growth model in ComBase is in a large extent fail-safe. According to the consumer survey realized in the study project, it appeared that the majority of the consumers stores the rice cakes in a cooled manner. Therefore, the risks were characterized with the aid of the growth model in ComBase in function of different combinations of time and temperature storage conditions at the bakery. The uncertainties of the risk assessment were discussed.

Conclusions

Bacillus cereus is a hazard inherent to the raw materials of rice cakes, namely rice and raw milk. As the spores can survive the baking process, this pathogen constitutes a risk for the consumption of rice cakes. In cooled storage conditions the risk is very low, but when one deviates from a cooled storage, the storage has to be limited in time. In the study project, challenge tests of *Bacillus cereus* in rice cakes were performed. In this way, the predictability of the growth model in ComBase could be validated. The food safety risk resulting of storing rice cakes at ambient temperature at the bakery during 12 hours is estimated to be low. Also,

when the rice cakes are stored in a cooled way afterwards, the risk is estimated to be low. Obviously, this conclusion is only valid if good hygienic and production practices are respected at all times at the bakery. Supplementary recommendations were made.

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