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Advisory Committee on the Microbiological Safety of Food

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Food Safety – Maximum levels of chlorate in Foods

This feedback concerns the draft regulation Ares (2019)334046 relating to temporary Maximum Residue Levels for Chlorate in Foods. The feedback represents the views of the UK Advisory Committee on the Microbiological Safety of Food¹ (ACMSF) and its subgroup on Quaternary Ammonium Compounds (QACs) and Biocides used in Food Processing. ACMSF is a scientific advisory committee that provides the UK Food Standards Agency with independent expert advice on matters relating to the microbiological safety of food.

The safety issues associated with chlorate residues in food are complex and not effectively expressed in terms of simple cause-effect relationships or simple thresholds.

There are many potential sources of chlorate residues in foods. Chlorate residues in foods can arise during processing from the use of chlorinated water for washing or from the use of commercial disinfectants (e.g. hypochlorite) for cleaning. Both of these processes are used (and required) to maintain good hygiene during food manufacture and retail. Good hygiene is a central pillar of microbiological food safety. In this respect Maximum Residue Levels (MRLs) for chlorate are not a simple expression of a hazard but represent the level of control adopted in relation to coincident chemical and microbial hazards. A rational strategy for this control involves optimization of chlorate residue levels in relation to the characterization of both hazards. This situation is expressed explicitly in a recommendation as part of the published EFSA opinion on “Risks for public health related to the presence of chlorate in food”

- “Efforts to reduce chlorate levels in food should take into account whether these would have an impact on microbiological food safety” - EFSA Journal 2015;13(6):4135.

For chlorate residues in foods the ALARA (As Low As Reasonably Achievable) approach, used to set new MRLs, does not achieve an

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optimization with respect to combined chemical and microbial risks and, therefore, this approach could, unintentionally, be detrimental to public health. Complexity (competition) associated with coincident chemical and microbial hazards ensures that one-sided minimization is not explicitly a precautionary approach.

The ACMSF subgroup on QACs and Biocides used in Food Processing explored alternative strategies for process hygiene that did not contribute to (or reduced) chlorate residues in food. All of the alternative strategies included additional uncertainties (including absence of crucial data, absence of clear best practice or sustainability of increased water usage) that did not allow a conclusion of substantial equivalence of risks.

Established hygienic practice in food processing, which includes the use of chlorinated disinfectants, has a strong record with respect to food safety. A progressive approach, avoiding unintentional consequences, would combine this record of efficacy with a drive to reduce residue levels by initiating a dedicated risk assessment that addresses multiple hazards and allows optimization with respect to public health (A report concerning risk assessment for norovirus in foods identified 18 published articles with relevant information about efficacy of disinfection – Risk Analysis 37(11), 2017). This approach would satisfy concerns raised by Food Business Operators and would implement recommendations previously made by EFSA in a published opinion on chlorate levels in food.

Yours sincerely

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