EFSA Panel on Biological Hazards (BIOHAZ); Scientific Opinion on Reflecting on the experiences and lessons learnt from modelling on biological hazards - DTU Orbit (10/12/2018)

Quantitative analysis of scientific evidence involves the collection of data and modelling of a situation or process under consideration and this protocol is the basis of quantitative microbial risk assessments (QMRA). The lessons and experiences from quantitative risk assessments and modelling undertaken by the BIOHAZ Panel are reviewed.

Quantitative models in risk assessments were found to be essential for providing an output that could be used by risk managers to support a proportionate response to a situation and/or to balance risks and costs. QMRA is a developing field which creates methodological uncertainties, and therefore, preferences for types of models cannot be specified. Newer approaches need to be identified and considered. Fit for purpose and simplicity are key issues when developing QMRA models. However, limits on time and resources may restrict the model selection. At the start, preferably before accepting the mandate, a scoping exercise is recommended. The scoping exercise could include an assessment of the mandate, possible interpretations of the terms of reference, deadlines, the modelling approaches possible and the data requirements. To support this process, a model catalogue could be developed. The choice of modelling approach is guided by the available data and cause-effect relationships. The basis/assumptions of each quantitative expression should be clearly stated as well as the associated uncertainties. Certain expressions such as “negligible”, “concern” and “unlikely” should be used carefully, with scientific criteria and context clearly defined, or avoided.