GLOSSARY OF TERMS

These definitions are mainly those adopted on an interim basis at the 22nd session of the Codex Alimentarius Commission for microbiological, chemical, or physical agents and risk management and risk communication. The CAC adopted these definitions on an interim basis because they are subject to modification in the light of developments in the science of risk analysis and as a result of efforts to harmonise similar definitions across various disciplines.

**Adverse effect:** change in morphology, physiology, growth, development or lifespan of an organism which results in impairment of functional capacity or impairment of capacity to compensate for additional stress or increase in susceptibility to the harmful effects of other environmental influences. Decisions on whether or not any effect is adverse require expert judgement.

**Assumption:** an expert judgement made on the basis of incomplete information, which therefore has uncertainty associated with it.

**D value (decimal reduction time):** 90% (= 1 log) loss of viability due to a lethal process such as heat (cooking), acidity or irradiation. See also Z value.

**Dose–response assessment:** the determination of the relationship between the magnitude of exposure (dose) to a chemical, biological or physical agent and the severity and/or frequency of associated adverse health effects (response).

**Exposure assessment:** the qualitative and/or quantitative evaluation of the likely intake of biological, chemical and physical agents via food as well as exposure from other sources if relevant.

**Food:** any substance, whether processed, semiprocessed or raw, which is intended for human consumption, including drinks, chewing gum and any
substance which has been used in the manufacture, preparation or treatment of ‘food’, but excluding cosmetics, tobacco and substances used only as drugs.

**Food safety objective:** a government-defined target considered necessary to protect the health of consumers (this may apply to raw materials, a process or finished products).

**Hazard:** a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect.

**Hazard characterisation:** the qualitative and/or quantitative evaluation of the nature of the adverse health effects associated with biological, chemical and physical agents which may be present in food. For the purpose of microbiological risk assessment the concerns relate to microorganisms and/or their toxins. For biological agents, a dose–response assessment should be performed if the data are obtainable.

**Hazard identification:** the identification of biological, chemical and physical agents capable of causing adverse health effects and which may be present in a particular food or group of foods.

**Qualitative risk assessment:** a risk assessment based on data which, whilst forming an inadequate basis for numerical risk estimate, nonetheless, when conditioned by prior expert knowledge and identification of attendant uncertainties, permits risk ranking (comparison) or separation into descriptive categories of risk.

**Quantitative risk assessment:** a risk assessment that provides numerical expression of risk and indication of the attendant uncertainties.

**Microbiological risk:** a risk that is related to the presence of a microbiological hazard (such as bacteria, viruses, yeast, moulds and algae, parasitic protozoa and helminths). This includes the chemical hazards they may produce (toxins and metabolites). (From proposed draft principles and guidelines for the conduct of microbiological risk assessment – CCFH 2000); (see Internet Directory.)

**Risk:** a function of the probability of an adverse health effect and the severity of that effect, consequential to a hazard(s) in food.

**Risk analysis:** a process consisting of three components: risk assessment, risk management and risk communication.

**Risk assessment:** a scientifically based process consisting of the following steps: (1) hazard identification, (2) hazard characterisation, (3) exposure assessment, and (4) risk characterisation. The definition includes quantitative risk assessment, which emphasises reliance on
numerical expressions of risk, and also qualitative expressions of risk, as well as an indication of the attendant uncertainties.

**Risk assessment policy**: consists of documented guidelines for scientific judgement and policy choices to be applied at appropriate decision points during risk assessment.

**Risk characterisation**: the qualitative and/or quantitative estimation, including attendant uncertainties, of the probability of occurrence and severity of known or potential adverse health effects in a given population based on hazard identification, hazard characterisation and exposure assessment.

**Risk communication**: the interactive exchange of information and opinions throughout the risk analysis process concerning hazards and risks, risk-related factors and risk perceptions, among risk assessors, risk managers, consumers, industry, the academic community and other interested parties, including the explanation of risk assessment findings and the basis of risk management decisions.

**Risk estimate**: output of risk characterisation.

**Risk management**: the process, distinct from risk assessment, of weighing policy alternatives, in consultation with all relevant parties, considering risk assessment and other factors relevant for the health protection of consumers and for the promotion of fair trade practices, and, if needed, selecting appropriate prevention and control options.

**Scenario set**: a construct characterising the range of likely pathways affecting the safety of the food product. This may include consideration of processing, inspection, storage, distribution and consumer practices. Probability and severity values are applied to each scenario.

**Sensitivity analysis**: a method used to examine the behaviour of a model by measuring the variation in its outputs resulting from changes to its inputs.

**Threshold**: dose of a substance or exposure concentration below which a stated effect is not observed or expected to occur.

**Transparent**: characteristics of a process where the rationale, the logic of development, constraints, assumptions, value judgements, decisions, limitations and uncertainties of the expressed determination are fully and systematically stated, documented, and accessible for review.

**Uncertainty**: lack of sufficient or reliable data or knowledge.
Uncertainty analysis: a method used to estimate the uncertainty associated with model inputs, assumptions and structure and/or form.

Variability: distribution of values due to known variables such as biological variation, seasonal changes and amount of food eaten.

Z value: temperature increase required to increase the death rate tenfold, i.e. the temperature increase that reduces the $D$ value tenfold.