

The following steps could be taken to avoid consumption of contaminated foods:

- 1. **Avoid overdose** use of **pesticides or preservatives** such as sodium benzoate.
- 2. Samples of food crops or **food** product should be **tested for residual** pesticides or preservatives by appropriate agencies e.g. NAFDAC to ensure safety before they are distributed to the market for consumers.
- 3. In preparation of foods, simple **unit operations** such as peeling/dehulling, soaking, dewatering, boiling, roasting and drying **could get rid of the natural food toxins and antinutritional** constituents to insignificant levels when properly done.
- 4. **Properly cooked food** before consumption will prevent food poisoning by microorganisms.
- 5. **Good hygiene**, good **handling** of food to avoid recontamination after cooking and **proper storage** of food before consumption (**Good Manufacturing Practices**)

# Risk Assessment for Biological Hazards

**Risk assessment** refers to the determination of the risk posed by an entity or situation to a population. To carry out risk assessment of biological hazards, there is need to determine the probability of risk. In this method, the probability, or likelihood, of an adverse event occurring due to consumption of a biological hazard is determined. In addition, the magnitude, or severity, of the risk, even if unlikely to happen, is taken into consideration.

To carry out a risk assessment of biological hazards, the following steps is carried out:

- 1. **Identify** and **characterize** the **hazard** (is it bacterial, viral, etc?)
- 2. **Assess the dose** required (number of **microorganisms**) necessary **to produce illness**.
- 3. **Assess the exposure** of the population **to** the particular biological **hazard** (prevalence of the organism in a particular food).

In conducting a risk assessment, several mathematical models of probability can be used. The most common is the Poisson distribution, expressed as:

$$P = 1 - e^{-RN}$$

where P= **probability** (in percentage) of infection with a food borne pathogens, also known as the risk; R is a **constant** specific to a particular pathogen, based on its growth characteristics, also known as the **probability of getting sick if one cell of the pathogen is consumed**; and N is the **number of cells** of the pathogen present in a particular food.