



**Title:** Microbiology of Food Processing

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**Aims and Objectives:**

Bacteria are the most important and troublesome of all the microorganisms for the food processor. Bacteria are single-celled living bodies. Varying in length from 1/25,000 to 1/1,000 of an inch, they are among the smallest living creatures known. There are many different ways to classify and group microorganisms, such as microscopic appearance; materials they can use as foods; byproducts resulting from the breakdown of these foods; tolerance to oxygen; growth temperatures; resistance to destructive agents, such as heat and chemicals; ability to perform certain biochemical reactions in the laboratory; and possession of certain genetic sequences.

**Methods :**

Foods that require considerable handling during preparation and are kept at slightly elevated temperatures after preparation are frequently involved in staphylococcal food poisoning. Human intoxication is caused by ingesting enterotoxins produced in food by some strains of *S. aureus*, usually because the food has not been kept hot enough (140 °F [60 °C] or above) or cold enough (45 °F [7.2 °C] or below).

**Freezing –**

The oocysts are not infective after freezing at -94 °F (-70 °C). However, some oocysts remain viable after 7 days at 5 °F (-15 °C) and -4 °F (-20 °C) (Fayer and Nerad, 1996).

**Disinfectant –**

The oocysts are very resistant to disinfectants. Although routine chlorination of water is not effective, the use of ozone disinfection is highly effective (Casemore, 1995).

**Drying –**

The oocysts are very sensitive to drying. In one study, 95 percent of oocysts died within 4 hours at room temperature (Robertson et al., 1992). V UV Light – The oocysts are sensitive to UV light used in water treatment (Hargy et al., 2000).

**Results:**

The amount and frequency of sampling depends on the amount of risk inherent to the product and on a number of variables. These include, but are not limited to, the number of antimicrobial interventions, the number of suppliers, whether you follow best practices, and how product lots are determined. Another variable that will impact risk is the level of contamination. Products with low levels of contamination must be sampled more frequently than heavily contaminated products to obtain the same level of confidence from the results.

## **Conclusions:**

Samples should be properly and completely identified. Be sure to minimize opportunities for spoilage while transporting samples to the laboratory because growth of competing spoilage bacteria could mask the presence of pathogens in the sample and make them harder to detect. Avoid freezing samples during storage and transit because pathogens can die off during freeze/thaw cycles.

## **Biography**

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