

Literature Review

A Literature Review of Salmonella Growth and Survival in Low Water Activity Foods (M. A. Cahill, 2015)

Foods manufactured with water activities below 0.85 have been shown to prevent the production of many pathogens. However, there is still a risk for foodborne illness with certain foods that are considered to have low water activity. The risk for contamination is independent of the processing phase and, therefore, can be present in the finished product if a pathogen is in the raw material. This literature review specifically addresses the survivability of *Salmonella* in spices, powders, flours, peanut butter and dried fruits and meats; all considered to be low water activity foods. *Salmonella*'s ability to adapt to, and resist destruction in, typical manufacturing environments has made this pathogen an issue for many dry food processing manufacturers. In addition, the survival of *Salmonella* under low water activity is neither serotype nor food dependent. Risk based process controls must be validated and applied consistently from receipt of raw materials to shipment of finished product since *Salmonella* contamination of the food can occur at any point. Although foods with low water activity are typically not good hosts for most bacteria associated with foodborne illnesses, *Salmonella*'s ability to survive through adaptation makes it a special concern for dry food processing manufacturers.