



Understanding the Environmental Monitoring Zone Concept

An effective environmental monitoring program is critical for measuring the overall effectiveness of microbiological controls in food processing facilities and allows companies to be proactive in preventing foodborne contamination. The Environmental Monitoring Zone Concept should be used when conducting environmental sampling:

Zone 1 refers to all direct food contact surfaces (e.g., slicers, mixers, conveyors, utensils, racks, work tables, etc.). For inspections focusing on the presence of *Salmonellae*, food contact surfaces are normally not sampled. In contrast, for inspections focusing on detection of *Listeria monocytogenes*, sampling of food contact surfaces is essential.

Zone 2 encompasses the areas directly adjacent to Zone 1. For investigations focusing on *Salmonellae*, this is the area where environmental contamination is most likely to directly affect safety of the product. In a small production room, Zone 2 includes all non-food contact surfaces in the processing area (e.g., exterior of equipment, framework, food carts, equipment housing, gears, ventilation/air handling equipment, floors, etc.). In a much larger room, Zone 2 is the area around the exposed product in which a pathway to product contamination could exist, either through the actions of man or machine. A far corner of the room could be considered Zone 2 if foot traffic or forklifts move through that area and these traffic patterns also go very near a line where exposed food is conveyed or held.

Zone 3 is the area immediately surrounding Zone 2. Zone 3, if contaminated with a pathogen, could lead to contamination of Zone 2 via actions of humans or movement of machinery. Zone 3 could include hallways and doorways leading into food production areas or, in a large production room, areas further away from food handling equipment than typical Zone 2 areas.

Zone 4 is the area immediately surrounding Zone 3, which, if contaminated with a pathogen, could lead to contamination of Zone 3 via the actions of humans or machinery. Examples include an employee locker room if not immediately adjacent to food production rooms, dry goods storage warehouse, finished product warehouse, cafeterias, hallways, and loading dock area.

Most environmental samples collected should be taken from Zone 1 and Zone 2, and to a lesser degree Zone 3. Very few, if any, environmental samples should be taken from Zone 4.