

# TECH TIPS

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## Sample Plans for Microbiological Monitoring

It is impossible to provide one set of instructions for developing a sample plan to conduct environmental monitoring in a food production facility. The reason for monitoring, the nature of the food product produced, the physical conditions present, and economic considerations will all influence where, when, and how you will collect microbiological samples. Sampling and basic micro testing provide an estimate of microbial levels present in various types of samples and on food contact and non-food contact surfaces.

Basic Steps for Developing a Sample Plan

- Determine the reason for sampling
- Determine where to collect samples
- Determine the method of sample collection
- Schedule a date and time to conduct sampling

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# Sample Plans for Microbiological Monitoring

STEP 1:
Determine the reason for microbiological sampling and testing.
Possible Reasons:

- Verify cleaning and sanitation practices
- Determine the frequency of sanitation or special maintenance such as replacing air filters
- Detect niches for undesirable microorganisms
- Determine environmental source of a product spoilage organism
- Determine unacceptable conditions or practices
- Establish acceptable microbiological criteria for sample sites

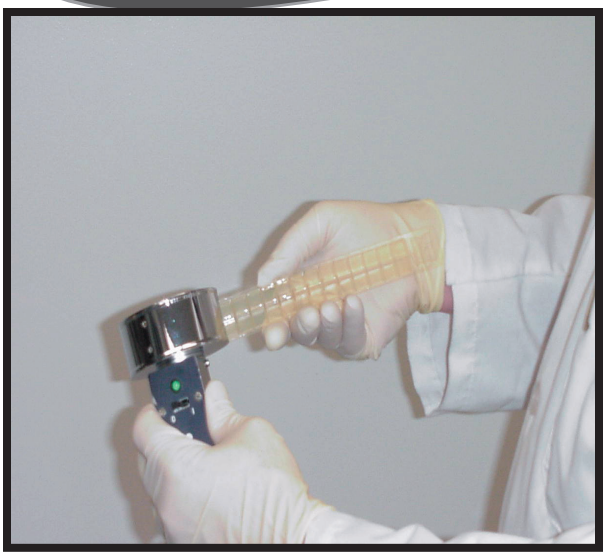
Knowing the objective of your sampling will aid you in determining where to collect samples. You may have to gather information from the customer quality assurance department, micro lab technicians, sanitation personnel, and production employees.

STEP 2:
Determine the areas from which to collect microbiological samples based on the following factors:

- The reason for sampling
- The nature of product produced and the probable types of microbial growth the product may support.
- HACCP critical control points
- Difficult to clean areas, equipment in poor condition, equipment of poor sanitary design
- Information gathered on-site at the account

Types of samples collected in a food plant for microbiological evaluation may include the following:

- Food Processing Equipment Surfaces
- Food contact and non-food contact areas
- Environmental Surfaces
- Floors, Walls, Drains, Ceiling, Air Vents, Overhanging Pipes
- Employee Equipment
- Squeegees, Hoses, Forklifts, Carts, Pallets, Tools
- Water
- Incoming, Treated
- Air
- Environmental, Compressed
- Processed Foods
- Ingredients, Packaging



The number of samples collected and frequency of sampling can be determined by pervious microbiological results, quality assurance trends and statistics, and product risk potential.

STEP 3:
Determine the method of sample collection.

- Swabs - Surface Areas Cracks, Crevices, Corners, Irregular Shapes, Hard to Reach Places
- Sponges - Large Surface Areas
- RODAC Plates - Flat, Impervious Surfaces or Sedimentation Air Sampling
- Rinse Waters - Interior Surfaces of Fillers, Storage Tanks, Pipelines, etc.
- RCS Air Sampling -Airborne Microorganism Counts
- Direct Sampling -Liquid and Solid Samples Aseptically collected in sterile containers or bags

STEP 4:
Schedule a date to conduct environmental monitoring. Gather sample keys, sampling supplies and the sampling equipment necessary to collect your specific samples.

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