

Water Safety



Water is essential in the food industry as an ingredient or as part of a process. Water is used for different operations, including: food manufacturing, cleaning, ice making, and steam production. Food processors must ensure that water and the water systems in their facilities are safe and meet provincial regulations and national quality guidelines.

Water Contaminants

- Biological agents: enteric pathogens (bacteria, viruses and protozoa)
- Chemical processes: chemical spills, incorrect use of pesticides, waste improperly disposed
- Physical agents: suspended particles of fine sand, clay and precipitated salts which can interfere with effective disinfection and purification of water
- Maximum acceptable levels for biological, chemical and physical contaminants are established by Health Canada in the *Guidelines for Canadian Drinking Water Quality-Summary Table* [Guidelines for Canadian Drinking Water Summary Table](#)
- The Canadian Food Inspection Agency (CFIA) recommends processors test their water supplies once a year for bacteria and twice a year for chemicals to ensure they meet provincial regulations and national quality guidelines
- Food processors must have a system that ensures they are using safe and potable water in food production. One approach is to test the water. Steps involved in water safety testing or analysis include:

Water Sampling

Water in a food facility should be tested from different outlets. A minimum of 100 milliliters water sample is required. When taking samples, food processors should:

- Run water from taps or hoses for at least three minutes before collecting it in sterile bottles.
- Transport water samples promptly to the certified testing laboratory within 24 hours. If possible, keep the sample refrigerated or use ice packs.
- Test water samples for microbial and chemical parameters.

Microbial Testing

- *E. coli* is the most specific indicator of fecal contamination and the possible presence of pathogens in water. The acceptable limit for both Coliforms and *E. coli* in water used in food production is **none detectable per 100 millilitres**, under the Guidelines for Canadian Drinking Water Quality [Guidelines for Canadian Drinking](#)
- If the microbial results are positive (>zero per 100 millilitres), food processors must take immediate corrective action.

Chemical Testing

- Chemical test should include: pH, heavy metals, pesticides, residual chlorine, water hardness, iron and nitrates.
- For a complete list of current guidelines for chemical parameters see the Guideline for Canadian Drinking Water Quality information on chemical and physical limits section at: [Guidelines for Canadian Drinking Water Quality](#)
- A list of laboratories that provide testing services can be found on the Laboratories and Testing section of the Food Safety Initiative website: manitoba.ca/agriculture/food-safety/at-the-food-processor/laboratories-and-testing.html.

Water Systems in a Food Facility

- Ensure there is no risk of potential contamination within the food operation. Water lines should remain clean.
- Keep complete and updated plumbing diagrams of the food plant (that identify potable water, sprinkler and sewage system) to avoid cross contamination.
- Prevent dirt or contaminated water from flowing towards a clean source. Backflow prevention devices can help keep water clean.
- Design water systems that provide water at the required temperature and pressure for food processing, cleaning equipment and employee sanitary facilities within a food plant.

Documentation

- It is important to monitor the quality of water used in your facility.
- Include water sampling procedures (e.g., how to sample, how often, where to sample) in a written Standard Operating Procedure (SOP).
- Keep records of microbial and chemical results. These records prove the water is safe.
- Records are particularly useful if there is an audit or a recall.

Manitoba Water Regulations

For information on provincial water acts and regulations see:

manitoba.ca/sd/water/drinking-water/acts_regulations/index.html

For more information on food safety please contact the Food Safety and Inspection Branch at foodsafety@gov.mb.ca.