Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Food Processing Facility

Guelph Food Research Centre

Agriculture and Agri-Food Canada's (AAFC) Guelph Food Research Centre (GFRC) is home to a unique pilot-scale food research facility that is helping Canada continue to be a leader in food safety and food process engineering research.

This special pilot plant allows scientists to work with pathogenic microorganisms in a controlled environment. Scientists study how microorganisms react to new and existing food processing technologies using pilot-scale equipment. For example, recent research into pasteurization using ultraviolet (UV) light has controlled bacterial contamination while showing better colour and taste retention in beverages such as apple juice.

The level 2 pilot plant was completed in the spring of 2011 through an investment under the Modernizing Federal Laboratories Initiative of Canada's Economic Action Plan. The facility was designed to encourage collaboration across government, industry, and academia. It supports the research of scientists at AAFC who work with key partners in food safety, including the Canadian Food Inspection Agency, Health Canada, the Public Health Agency of Canada, university scientists and the food processing sector.

The facility is benefiting Canadian farmers, food processors, and consumers by testing new advances in food processing methods that will enhance food safety.

Areas of Research

Since 2011, the researchers at this food processing facility have undertaken various research projects including:

- UV treatment to reduce mycotoxins (toxins produced by molds, a serious threat to livestock and human health) in food;
- Control of disease-causing microorganisms using minimal food processing;
- Using bacteriophages to prevent Listeria in ready-to-eat meats;
- Maintenance of safety and quality in reduced-salt meats with special processes that kill bacteria in food at a low temperature;
- Study of UV processing on safety of beverages processed at low temperatures;
- Development of UV systems as a treatment to control pathogens in beverages;
- Validation of new processing technologies for food safety and quality.

Canada

Features of the Pilot-Scale Food Processing Facility

This facility's state-of-the-art features enable highly sophisticated, controlled experiments which ensure safe foods and processing methods for Canadians.

- Three special units called BioBubbles are designed to contain any contaminated materials produced throughout testing processes.
- A microbiology laboratory, a cold storage unit, and a double-door autoclave, meet all requirements for proper waste decontamination.

BioBubbles

- All BioBubbles are equipped with High Efficiency Particulate Air (HEPA) filtration systems to prevent the release of microorganisms into the larger facility and environment.
- The BioBubbles can be sealed to permit decontamination of equipment after experiments are completed.
- One BioBubble permanently houses a high hydrostatic pressure processor that is used to kill bacteria in food at low temperatures.
- Two BioBubbles allow easy movement of equipment, including:
  - UV and conventional thermal pasteurizers;
  - Ultrasound;
  - Microwave processors;
  - Meat processing equipment and texture analyzers.

Allowing Future Innovations

The pilot-scale food processing facility is driving innovation to help Canada continue to be a leader in food safety. The research and collaborative efforts at the GFRC will foster new areas of opportunity for the sector for many years to come while enhancing the safety of the food supply and maintaining nutritional values. AAFC is committed to innovation as the key to an agricultural sector that is productive, sustainable, and competitive.

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www.agr.gc.ca
Paru également en français sous le titre Installation de transformation des aliments
Centre de recherches sur les aliments de Guelph

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