



Australian Government

Assessment Requirements for FBPFST4006 Apply food preservation technologies

Release: 1

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Modification History

Release	Comments
Release 1	This version released with the FBP Food, Beverage and Pharmaceutical Training Package Version 2.0.

Performance Evidence

An individual demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit.

There must be evidence that the individual has implemented two food preservation processes, including:

- heat treatment, and
- chilling or freezing.

For each process, the individual must:

- identify the effects of the preservation process on the food
- identify processing/operating parameters required of each process to meet safety and production requirements
- identify a food suited to the preservation process
- review the effectiveness of the treatment.

There must also be evidence that the individual has:

- evaluated the effects of irradiation or high pressure preservation on one food item.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- heat treatment principles, including:
- the relationship between high temperature and deactivation and destruction of microorganisms
 - the differences between blanching, steaming, canning and other methods of heat application to food
 - the effects of application of heat on qualities and properties of food stuffs

- biochemical, microbiological and physical changes to food as a result of heat application
- critical quality defects that can occur as a result of heat treatment
- how operating conditions, including temperature fluctuations or water/steam contacts with food, affect the nutritional/chemical composition of food
- how product parameters, including type, size, shape and chemical and biological composition affect the effectiveness of heat treatment on food
- the calculation and interpretation of F_0 , Lethality and F_h values
- low temperature processes, including:
 - the different techniques adopted in industry for freezing food products
 - appropriate freezing techniques, including freeze drying, for specific food products
 - industrial refrigerants currently used today to maintain low temperatures in chillers and freezers
 - the efficiency, cost and environmental impact of such refrigerants
 - biochemical, microbiological and physical changes to food as a result of slow or quick freezing
 - critical quality defects that can occur as a result of freezing and long term freezing of foods
 - how operating conditions, including temperature fluctuations, humidity and air velocity, affect the effective chilling and freezing and refrigeration of food
 - how product parameters, including type, size, shape and chemical and biological composition affect the effective chilling and freezing of foods
 - the appropriate freezing techniques for the major types of foods that can be frozen without loss of quality: fruits, vegetables, seafood, meats, baked goods and ready-to-eat food
 - refrigerants used in the past, including chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), and the ones currently used, including HCFC-123 and various blends
 - why certain refrigerants are a problem for the environment, including depletion of the ozone layer and 'Greenhouse' effect
- irradiation equipment, including:
 - types of foods suitable for irradiation
 - consumer acceptance and issues with irradiation
 - the most suitable irradiation techniques for specific food products
 - physical changes caused by irradiation of food
 - impact of irradiation on different species of microorganisms
 - enzymatic and other chemical changes caused by irradiation
 - potential quality defects that arise as a result of irradiation of food
 - processing/operating parameters of irradiation equipment as required to meet safety and production requirements
 - irradiation equipment safety and operation
 - labelling and other regulatory requirements of irradiation of food

- high pressure equipment, including:
 - types of foods suitable for high pressure processing
 - the most suitable high pressure techniques for specific food products
 - possible physical changes caused by high pressure processing of food
 - the impact of high pressure preservation technology on different species of microorganisms
 - enzymatic and other chemical changes caused by high pressure processing
 - potential quality defects that arise as a result of high pressure processing of food
 - operating procedures of high pressure processing equipment as required to meet safety and production requirements.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in a workplace setting or an environment that accurately represents a real food processing workplace
- resources, equipment and materials:
 - personal protective equipment required for applying food preservation technologies
 - food preservation equipment, manufacturers' advice and operating procedures
 - methods and related software systems as required for carrying out food testing and preservation and collecting data.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guides are found in VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4>