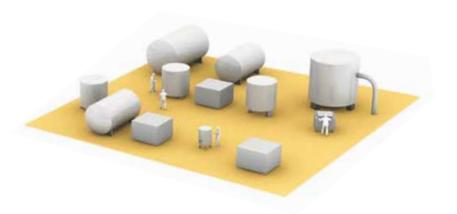
BIOPROCESS MODULE 4

Food

In a dedicated area, processes and products requiring a food-grade quality can be prepared.



Facilities

In order to ensure that the Food products are intrinsically safe for consumption by a test panel, the BPF has a dedicated Food-area. The equipment and infrastructure is designed and built according to Food Regulations and Standards (HACCP).

The Food section is fully separated from the other activities in the BPF, having a controlled access for personnel and raw materials

Fermentation

The Fermentation unit consists of several fermentors with the following range: 4 l, 40 l, 400 l and 2 m³. The unit is able to handle different type of fermentations, like: anaerobic, facultative anaerobic or aerobic. Feed vessels are available for fed-batch fermentations.

The broth can be the final product itself or can be processed in the Downstream Processing unit for further purification and concentration.

Downstream Processing

In the DSP section, the harvested broth from the Food fermentation module is processed into the final (or intermediate) Food Ingredient with the desired specification.

This section can also be used as a stand-alone section for non-fermented products which require final processing at pilot scale. The treatment method depends on the type of broth and the desired specifications.

The following unit operations are available:

- Cell removal (disk stack centrifuge)
- Ultra/microfiltration
- Ion exchange column chromatography
- Evaporative crystallizer
- Falling film evaporator
- Spray dyer

Additional equipment can be installed, obtained from the client or rentals.

The usage of flammable materials such as organic solvents is possible in the existing designated ATEX zone (T3).

Utilities

The standard utilities available include:

- Process and RO water
- Steam
- H₂SO₄ 98%, NaOH 25%, Ammonia 25%
- CIP liquids for cleaning

Available in 2014

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