EXTRACTION TANKS

FOR PLANT PROTEINS

Extraction tanks for plant proteins are equipment used in the processing of plant-based protein products. They are used to extract protein from plant materials such as soybeans, peas, and canola seeds. These tanks are typically large vessels that use a combination of mechanical and chemical methods to extract the protein from the plant material.

Key features and components:

1. Mixing system: The plant material is mixed with water and other chemicals to create a slurry that is then heated and agitated. This helps to break down the plant material and extract the protein.

2. Heating system: The slurry is heated to a specific temperature, typically between 80 and 90 degrees Celsius, to further aid in protein extraction.

3. Separation system: After the slurry has been heated and agitated, it is separated into solid and liquid components. The liquid component contains the extracted protein, while the solid component contains other plant material such as fibers and starch.

4. Filtration system: The liquid component is then filtered to remove any remaining solids and impurities.

5. Concentration system: The filtered liquid is then concentrated to increase the protein content, typically through a process of evaporation.

Extraction tanks for plant proteins are used in the production of a wide range of plant-based protein products, including plant-based meat substitutes, protein powders, and dairy alternatives.

Examples of food products

- Plant-based meat substitutes
- Protein powders and supplements
- Dairy alternative
- Baked goods
- Infant formula

Working Principle

1. Preparation: The plant material is cleaned and sorted, and then ground or milled into small particles to increase the surface area for protein extraction.

2. Mixing: The ground plant material is mixed with water and other chemicals, such as alkalis or acids, to create a slurry. The chemicals help to break down the cell walls of the plant material, releasing the protein.

3. Heating: The slurry is then heated to a specific temperature, typically between 80 and 90 degrees Celsius, to further aid in protein extraction.

4. Separation: After heating, the slurry is separated into solid and liquid components. The liquid component contains the extracted protein, while the solid component contains other plant materials such as fibers and starch.

5. Filtration: The liquid component is then filtered to remove any remaining solids and impurities.

6. Concentration: The filtered liquid is then concentrated to increase the protein content, typically through a process of evaporation.

Market scope

- One of the main drivers of the market is the increasing demand for plant-based proteins. As consumers become more health-conscious and environmentally aware, they are seeking out plant-based alternatives to animal protein.

- Another factor driving the market is the increasing demand for clean label and natural ingredients. Extraction tanks can be used to extract protein from a variety of plant sources, including soy, pea, rice, and hemp.

- In addition, food manufacturers are looking for new and innovative ways to incorporate plant-based proteins into their products, and extraction tanks provide an efficient and scalable solution.

- There are several companies that specialize in the production of extraction tanks for plant proteins, including **Alfa Laval, GEA Group, and Praj Industries**. These companies offer a range of solutions for the extraction of plant-based proteins, including batch and continuous extraction systems.

- The market for extraction tanks for plant proteins is expected to grow significantly in the coming years as demand for plant-based proteins continues to increase.