



CLEXTRAL

FIBRATED PROTEINS

BY HIGH MOISTURE
EXTRUSION (HME)
TWIN-SCREW EXTRUSION LINE

TECHNOLOGY OVERVIEW

HME technology enables the transformation of plant or animal proteins into products with a meat-like texture, offering a wide range of characteristics in terms of fiber structure, surface appearance, color, texture, flavor, and product size.

These wet fibrated proteins serve as a base ingredient for novel protein products, used in vegetarian or vegan dishes or further processed into ready-to-eat meals. Nutritionally balanced, the recipes incorporate plant-based proteins from sources such as soy, cereals, or legumes. Fish or meat based raw materials can also be used for human or animal consumption.



MAIN ADVANTAGES

- › Fibrous texture similar to that of meat or fish
- › Three die options available
- › High production throughput, up to 1200 kg/hour with the HCD die

COMPLETE FIBRATED PROTEINS PRODUCTION LINE

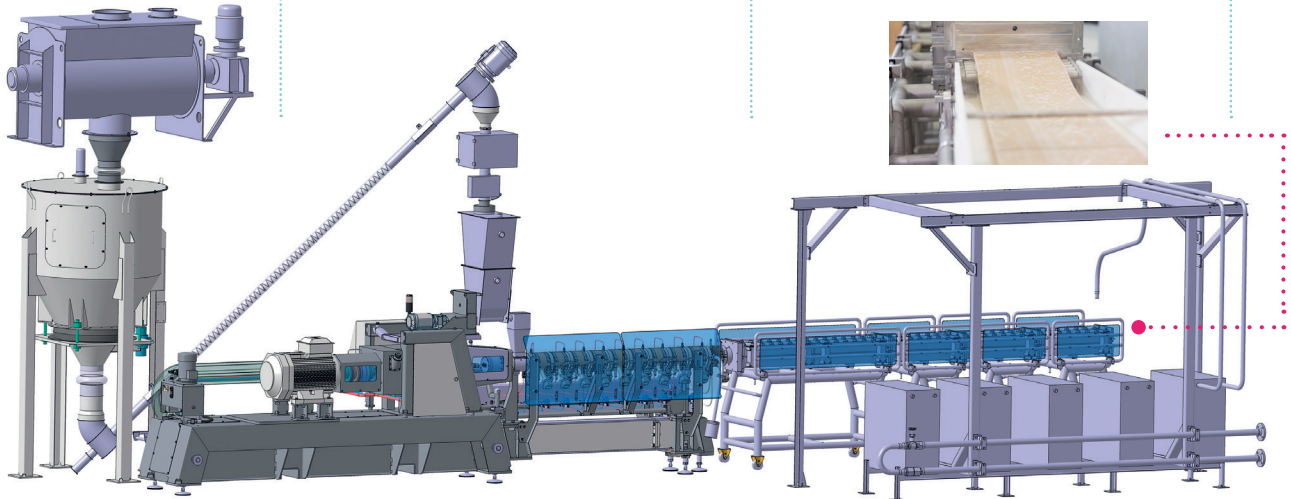
Process basics of HME:

- › HME, High Moisture Extrusion technology allows the continuous transformation of protein-rich raw materials under high moisture conditions (50 to 80%) and to generate a fiber like texture thanks to controlled and optimized heat transfer.
- › The twin screw extruder mixes and cooks the protein-rich ingredients under tightly controlled parameters. The processed mixture is then pushed through a long temperature controlled die that enhance cross-linkage of proteins and formation of fiber like texture.

RAW MATERIAL MIXING & FEEDING

EXTRUSION PLATFORM Thermomechanical mixing & cooking of protein-rich material

COOLING DIE Shaping & flow induced die fibrillation of protein melt



PRESENTATION OF 3 DIES

1. HCD (High Capacity Die)

The High Capacity Die, equipped with a double parallel output, doubles the capacity of the machine, up to 1200 kg/hour. The two product bands come out of the matrix at the same speed, continuous flow, without return pump. These two strips of product have the same characteristics of stretch, hardness and fibrillation. The quality of the product is stable and constant. The process is simple and uses the same footprint as a standard die.

2. Thick die

Products of 20 mm or 25 mm, made from vegetable proteins, are precisely cooled to the core and exhibit high-quality fibrillation.

3. Galaxy Texturation Technology: The synergy of two technologies

Galaxy Texturation Technology is a patented technology that combines the principles of the 'shear cell' fibrillation process with continuous extrusion. The protein material is cooked in the extruder, then subjected to shear and cooled within a dynamic die, resulting in a unique fiber orientation. This technology enables the production of large fibrous pieces (whole-cut style) with a tender, soft texture closely resembling that of meat or fish, with production throughputs of up to 400 kg per hour.

CERTIFICATIONS



ISO 9001:2015 Certification
Quality



ISO 14001:2015 Certification
Environment

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