



CLEXTRAL

TEXTURED PLANT-BASED PROTEINS

MAIN ADVANTAGES

- › Variable output capacities
- › Wide range of finished products
- › Control of water holding capacity
- › Precise process control
- › Expert advice

PROCESS TRENDY TEXTURED VEGETABLE PROTEINS (TVP) FROM A VARIETY OF RAW MATERIALS

TVP is a dry, expanded product used as an ingredient or directly re-hydrated and consumed as a meat substitute. It is also used in many vegetal dishes / products.

The product is an environmentally-friendly source of protein, sustainable, and offers a long shelf-life.

Clextral's continuous and flexible extrusion process gives processors multiple options to create healthy and premium foods from an extended range of raw materials.

RAW MATERIALS

- › Low-fat soy flour, defatted soy flour, soy concentrate, soy isolate
- › Pea isolate, pea concentrate
- › Wheat gluten
- › Other protein raw materials : fava bean, lentil, sunflower...
- › For some products, starch, cereal flour, salt, flavour & colouring are added



FLEXIBLE TECHNOLOGY & PROCESS

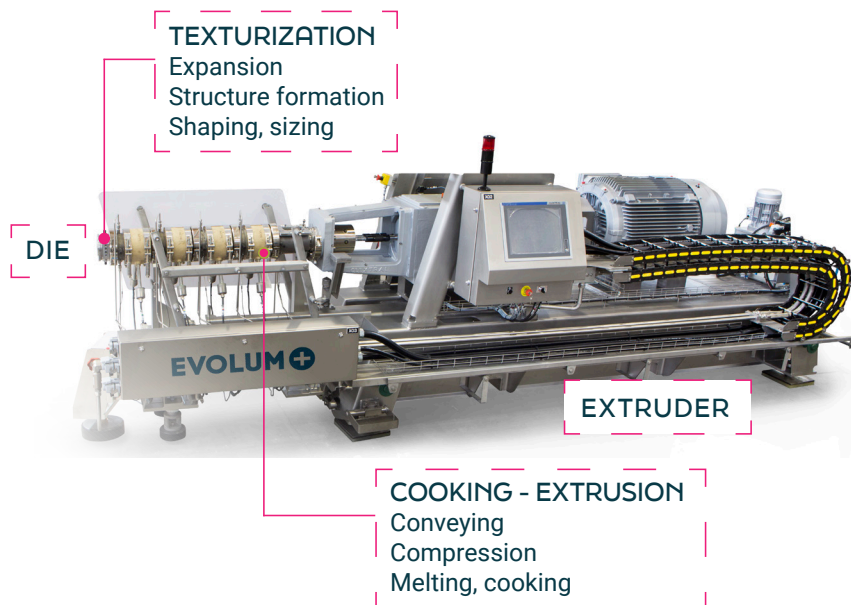
Clextral twin-screw extrusion systems enable processors to produce textured protein efficiently and economically.

- › Variable output capacities, from 20 kg/h to 4000 kg/h (depending on raw material)
- › Wide range of finished products: from commodities to sophisticated foods
- › Dies and cutter to easily make various shapes
- › Control of water holding capacity of extruded textured proteins is guaranteed through strict parameter control
- › Precise process control ensures consistent results and traceability
- › Expert advice and testing facilities to design new products and recipes



TVP MANUFACTURING PROCESS

Preconditioner may be required in some cases (for example, to increase production capacity when processing soybean flour or pea concentrate).



DRY PROTEIN TEXTURIZATION PROCESS

The majority of textured vegetable foods are produced by low moisture extrusion cooking:

- › Raw materials, die and screw designs, and operating conditions are adjusted to achieve desired quality and properties, such as: bulk density, water holding capacity, texture, aspect & shape.
- › Texture can be expanded, fibrous or spongy after rehydration.
- › TVP extrusion processing enables a range of shapes: chunks, slices, granules...
- › Dry protein-based ingredients are typically processed at low moisture content (10 to 27%) and cooked in the extruder using a combination of thermal and mechanical energy.
- › Die design determines the shape of the product.
- › TVP is cut at the die. A wet milling step can be added to further reduce the product size. After extrusion, the product is dried to reach a moisture content around 8 %.

CERTIFICATIONS



ISO 9001:2015 Certification
Quality



ISO 14001:2015 Certification
Environment

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