

Tasting the Future: Discovering Plant-Based Meat Analogues

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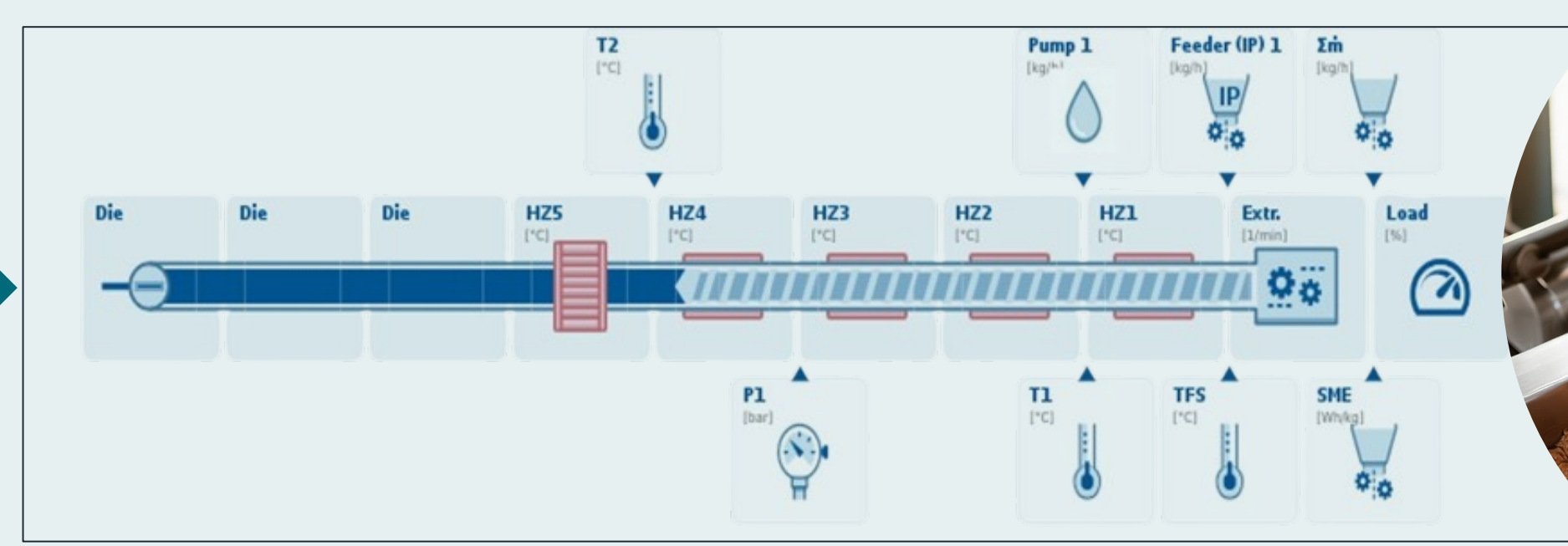
Background

- The increase in plant-based diets is driven by heightened environmental, health, and ethical awareness, making the development of meat analogues critical to satisfying consumer demands and achieving sustainability goals.
- Plant-based meat analogues are crucial in bridging the gap between traditional meat preferences and modern dietary choices, offering alternatives that mimic the sensory and nutritional qualities of animal meat.

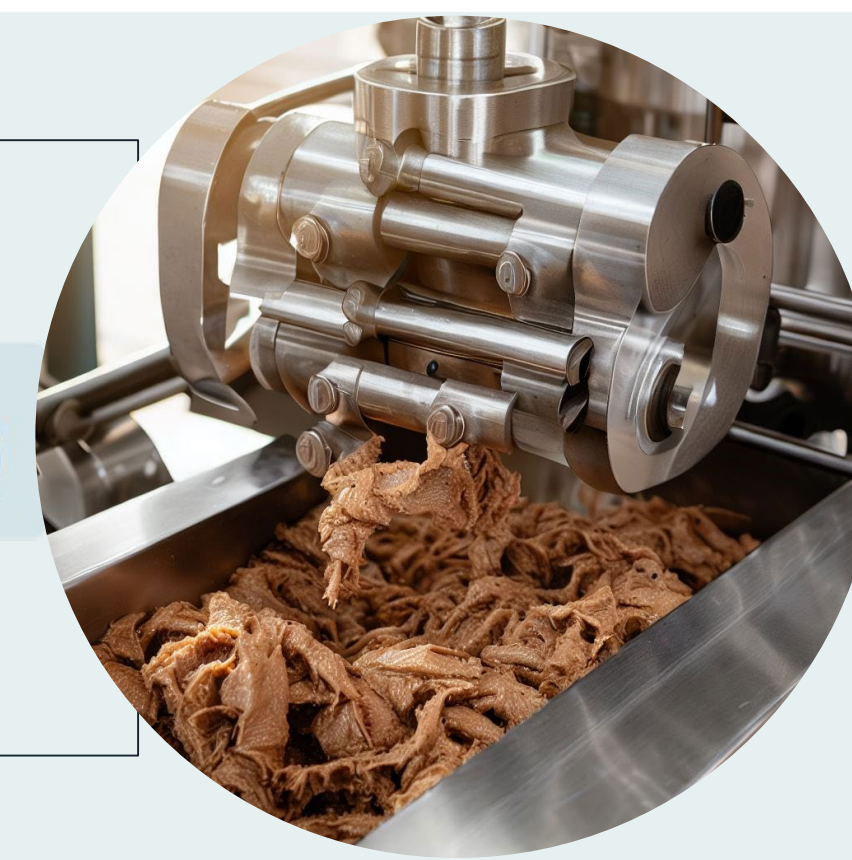
Methodology



Plant-based proteins,
starch, fats.

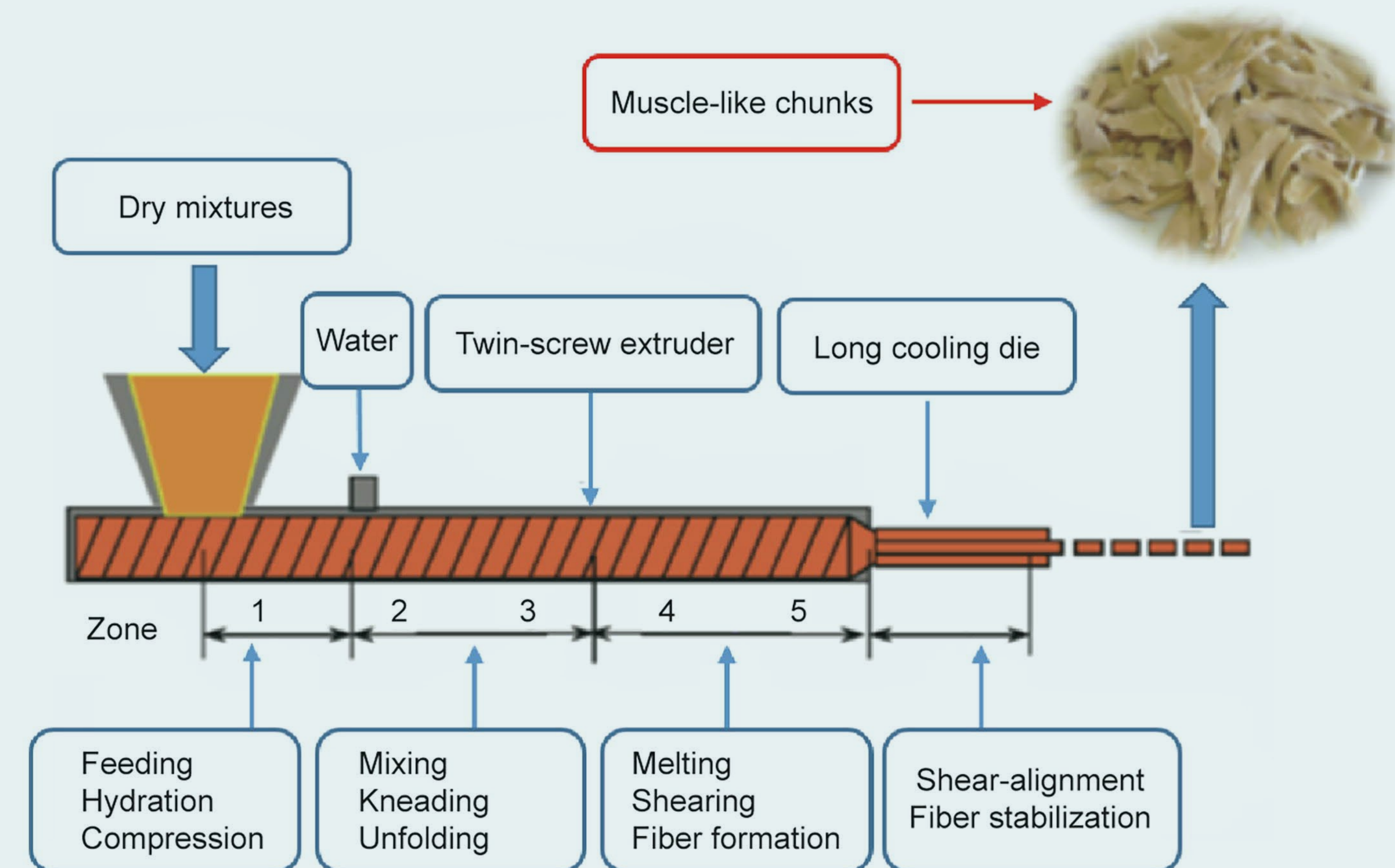


Extrusion cooking at high
temperature and pressure

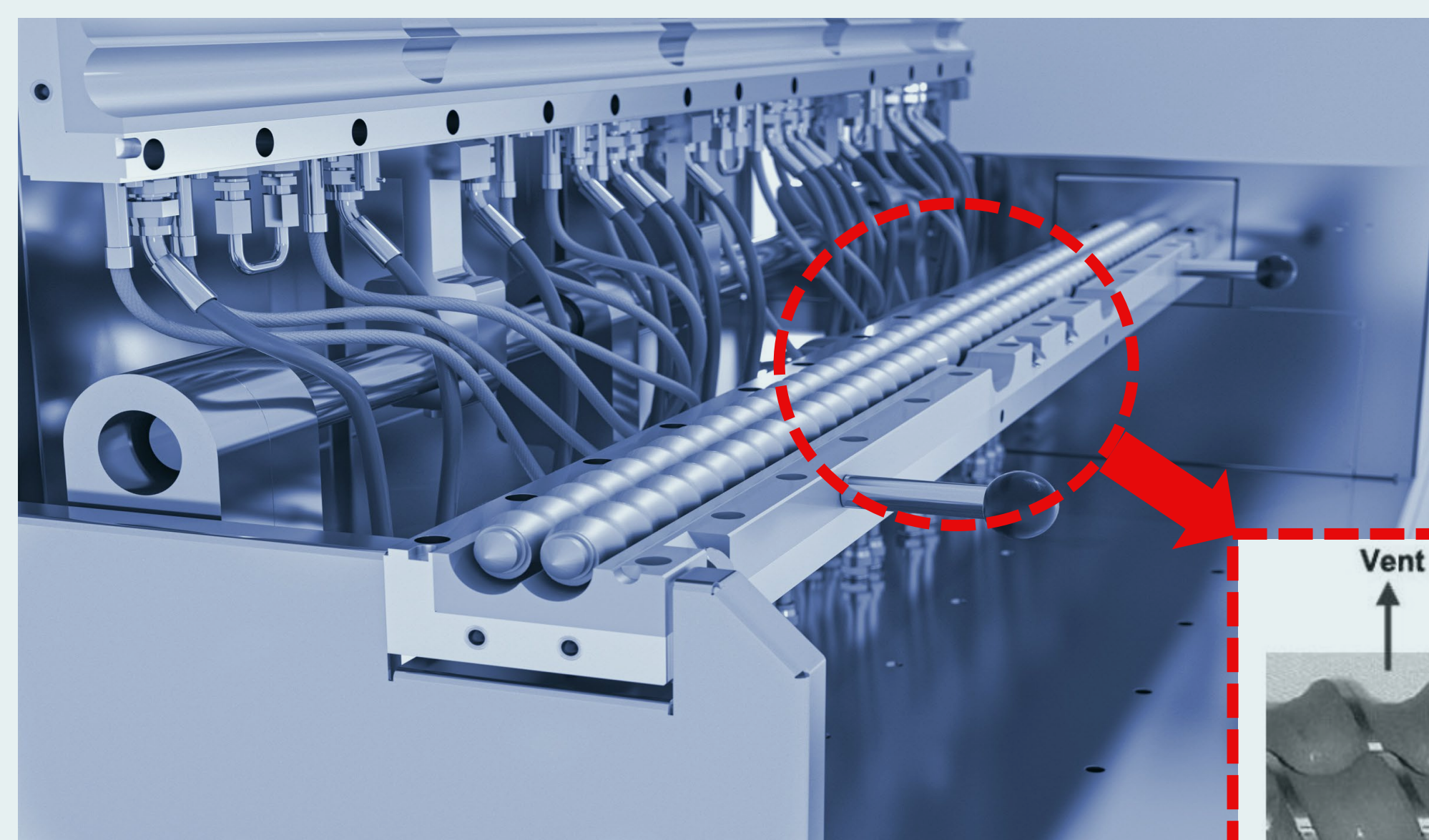


Plant-based meat analogues

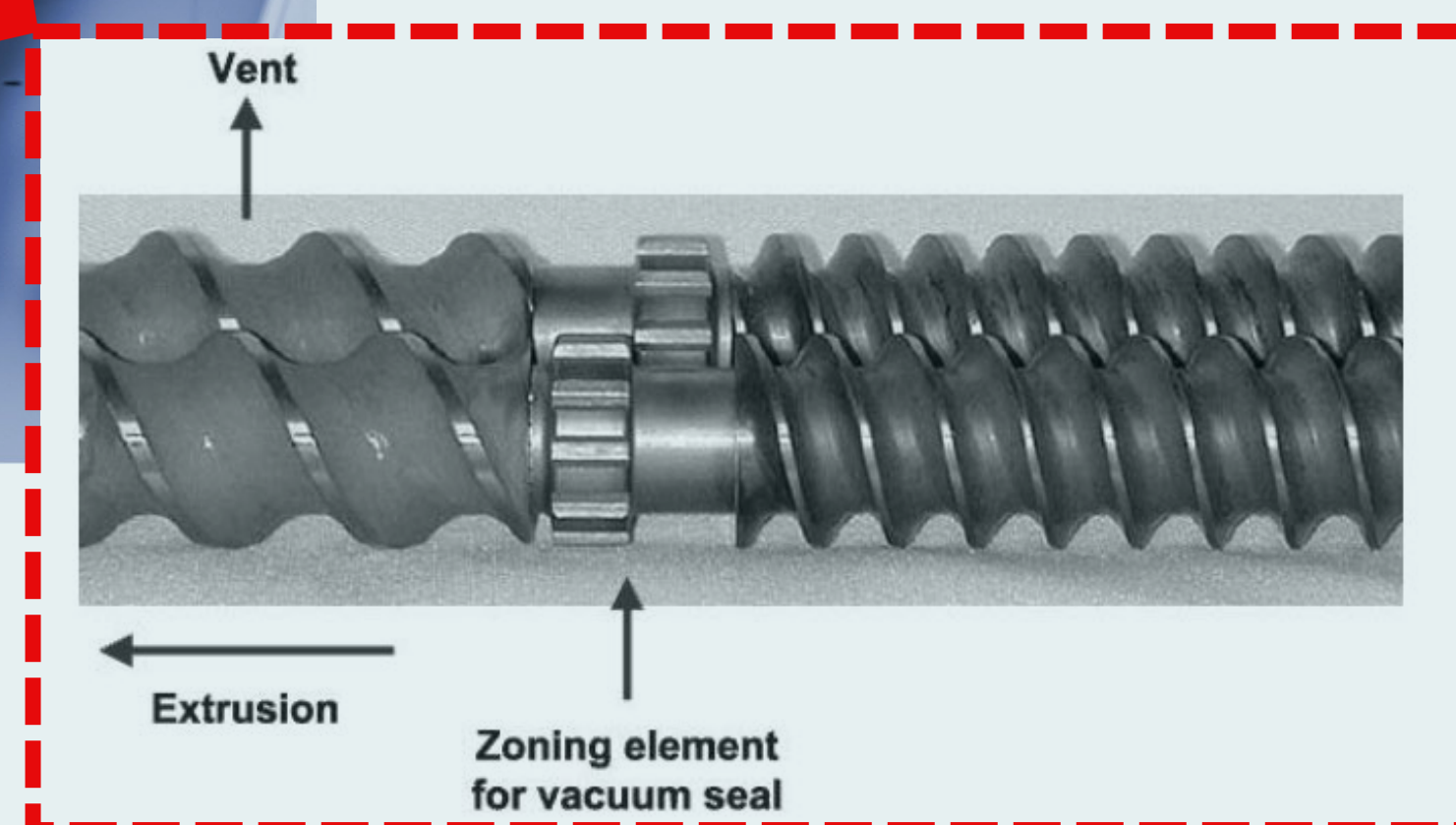
Working principle



- **Ingredient Mixing:** Ingredients such as proteins, starches, and fats are blended.
- **High-Temperature Cooking:** The mixture is cooked at high temperatures (up to 200°C) under pressure in the extruder.
- **Shearing:** Mechanical shearing aligns the protein molecules to create a fibrous, meat-like texture.
- **Cooling and Setting:** As the extrudate exits the die, it cools and sets into its final texture.
- **Texturization:** Specific dies shape the product to resemble various types of meat, such as strips or chunks.



Interior view of extruder



Screw configuration

Products



- Plant-Based Burgers
- Plant-Based Chicken Nuggets
- Plant-Based Patties
- Vegan Sausages
- Fish-Free Tuna sticks
- Vegan Crab Cakes



Please scan here for a video demonstration of extrusion process. The video was taken while conducting trials on extrusion of Soy protein-based meat analogues at Parc Científic at Gardeny, Lleida.

Acknowledgements



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