A plant-based meat analogue produced with an extruder

Source: Reine-Marie Guillermic

OUR FOOD PROCESSING RESEARCH GOALS

- Determine how to make healthy, tasty, high quality plant-based protein-rich foods
- Create palatable plant-based meat alternatives having
  - Properties similar to animal meats
  - Novel structure and textures
  - High nutritional quality (protein and fibre content, digestibility, etc.)

OUR FOOD PROCESSING LAB

THE PROCESS
Extrusion cooking to achieve fibre-like structure from cereal, pulse and oilseed flours, protein concentrates and isolates

THE AIM
Insight on the physical, chemical and biological processes behind plant-protein texturization to create new textures

THE INNOVATION
Non-destructive, on-the-go ultrasonic measurements to assess textural quality indicators like hardness and chewiness during manufacturing

THE RESULT
Texturized products that look, taste and satisfy just like meat!

PERFECTING PLANT-BASED MEAT ANALOGUES

A food made from vegetarian ingredients that mimics animal meat texture, appearance and taste.

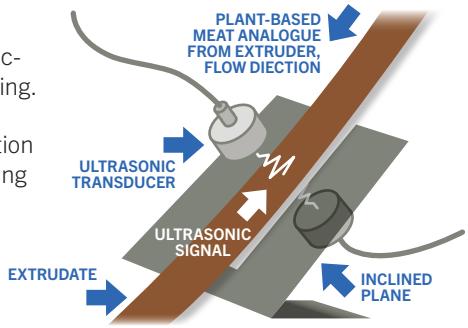
WHY PLANT-BASED PROTEINS?

- More than 40% of Canadians are **actively trying to incorporate more plant-based foods into their diets**
- **Canada's Food Guide recommends increasing consumption of plant-based sources** of protein such as beans, peas and lentils
- Plant-based meat analogues are an **alternative for Canadians looking for non-animal protein options**

WHY ULTRASOUNDS?

Ultrasonic techniques are a rapid and non-invasive way to non-destructively characterize changes in plant proteins during extrusion processing. The high-frequency sound waves alter with changes in food textures. Pairing low-intensity ultrasound with the food extruder on the production line will allow for process interventions to be made in real-time, ensuring end-product consistency.

THE "EXTRUSOUND" SET UP: *Ultrasonic transducers are used to emit and receive ultrasonic signals. An inclined plane is used to guide the material between the transducers during plant-based meat analogue production.*



RESEARCH LEAD: Filiz Koksel, food and human nutritional scientist, University of Manitoba

DIG DEEPER! Making plant-based meats foodilicious

MAKEmanitoba.ca

University of Manitoba

MANITOBA Agriculture & Food KNOWLEDGE EXCHANGE