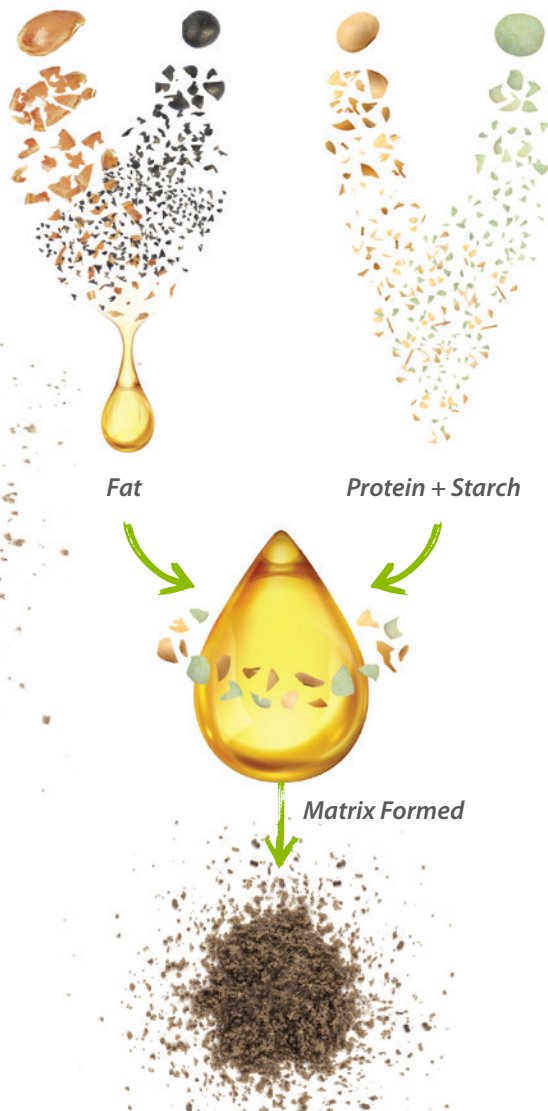


## How Dry Extrusion Works

Dry extrusion uses pressure and temperature to erupt oilseeds and gelatinize starches around fat cells. During the process, **protein-fat and protein-starch matrices** are formed and anti-nutritional factors are dissipated, creating a **Nutritionally Better** animal feed ingredient.

### Oil seeds

### Pulses



# The Power of Dry Extrusion

O&T Farms creates exceptional animal nutrition products through our unique, patented process.

Call 306.543.4777 today!

Web: [otfarms.com](http://otfarms.com) Email: [ot@otfarms.ca](mailto:ot@otfarms.ca)

 @OandTFarms

 otfarms

- ✓ Oilseed cell-wall ruptures
- ✓ Protein structures change
- ✓ Starches gelatinize
- ✓ Homogenization of feed materials
- ✓ Partial dehydration and sterilization of feed

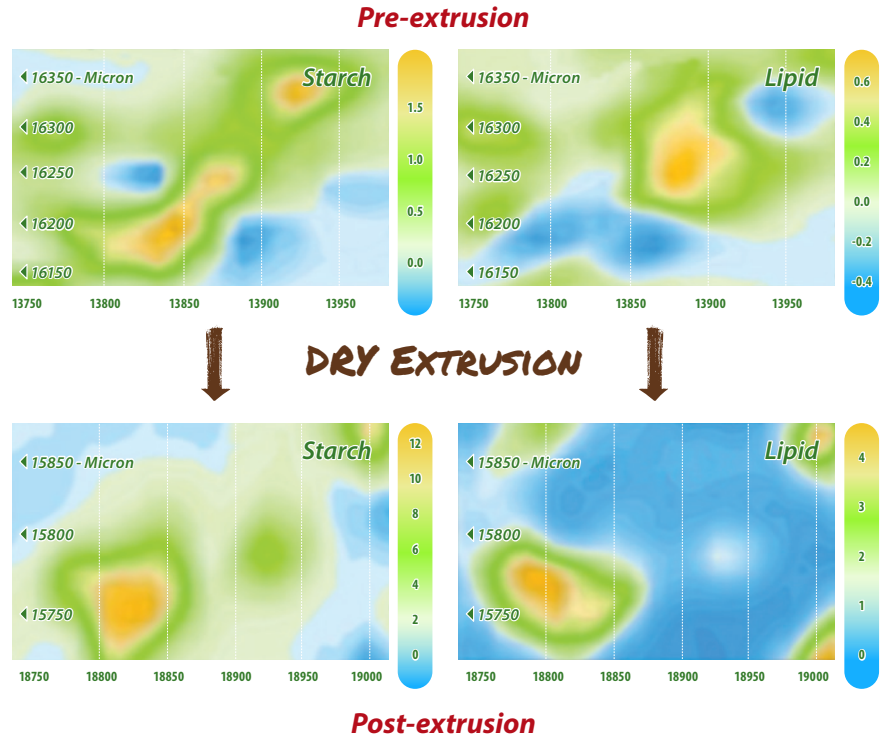


# Formation of Protein-Fat and Protein-Starch Matrices

Source: Canadian Light Source 2006

Distribution maps were generated using synchrotron light and microscope aperture of 10  $\mu\text{m}$  x 10  $\mu\text{m}$  to demonstrate the chemical changes of the feed materials through dry extrusion processing.

- ✓ The **starch** peaks become broader and less defined, suggesting a structural change.
- ✓ The **lipid** peaks aggregate within the starch source and become more defined, suggesting the formation of new nutritional matrices.



## Results of the Dry Extrusion Process

- ✓ Increased digestibility of starch, proteins (amino acids) and celluloses
- ✓ Increased metabolic energy
- ✓ Inactivation of anti-nutritional factors and undesirable enzymes
- ✓ Sterilization of product from important microorganisms
- ✓ Improved palatability
- ✓ Exceptional shelf life
- ✓ Consistent and reliable nutrient supply

## Quality Assurance

- ✓ Good Manufacturing Practices (GMP) at every level of production.
- ✓ In-house NIR analytical analysis of the the nutrient profile for both raw materials and the finished feed ingredient.
- ✓ Our facilities are CFIA approved to ensure all manufacturing controls and quality control programs are active and enforced. Our facilities are animal protein free.
- ✓ HACCP certified facilities.

"Our goal is to provide customers with a product that offers **EXCEPTIONAL** quality and consistency."

– Tim Wiens  
President O&T Farms



Call 306.543.4777 today!

Web: [otfarms.com](http://otfarms.com) Email: [ot@otfarms.ca](mailto:ot@otfarms.ca)

Twitter: [@OandTFarms](https://twitter.com/OandTFarms) Facebook: [otfarms](https://facebook.com/otfarms)