

## Research Abstract

### METABOLISM AND NUTRITION

#### **Performance of Broiler Chicks Fed Wheat-based diets Supplemented with Combinations of Non-extruded or Extruded Canola, Flax and Peas**

*Authors :* P.A. Thacker, B.P. Willing & V.J. Racz (University of Saskatchewan)

#### Purpose :

- To determine the potential of various combinations of flax, canola and peas to replace soybean meal in diets fed to broiler chicks.
- To determine whether the extrusion process is beneficial in improving the nutritive value of these protein sources.

#### Methodology :

- 210 1-day old, male broiler chicks were randomly assigned to one of seven dietary treatments for 21-days.
- Control diet was based on wheat and soybean meal, while the six experimental diets contained 25% extruded or non-extruded combinations of flax and peas (LinPro), canola and peas (ExtraPro), or canola, flax and peas (FlexiPro), added at the expense of the wheat and soybean meal.
- Chromic oxide was added to all diets as a digestibility marker.

#### Results :

- In comparison with the soybean meal diet, digestibility coefficients of dry matter were significantly lower for all diets containing either 25% extruded LinPro, ExtraPro and FlexiPro, or the non-extruded components that make up these products.
- Digestibility coefficients for energy and protein followed a similar trend except that extrusion significantly improved the digestibility coefficients for dry matter, crude protein and gross energy for LinPro and ExtraPro.
- All three products depressed feed conversion, but the depression was overcome with extrusion. There was no effect on feed intake and weight gain did not differ significantly, except when raw LinPro was fed.

#### Conclusion :

- Extrusion significantly increased digestibility coefficients for dry matter and energy and resulted in significant improvements in feed conversion.

