

Research Abstract

METABOLISM AND NUTRITION

Effects of coextrusion of flaxseed and field peas on the digestibility of energy, ether extract, fatty acids, protein, and amino acids in grower-finisher pigs

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Purpose :

To determine the ileal and total tract digestibility of individual fatty acids, ether extract, energy, protein, and amino acids in a mix of flax and field peas and to determine whether extrusion improves the nutritive value of this mix.

Methodology :

- A 50:50 mix of flax and field peas was divided and processed in 4 different ways:
 1. Ground through a knife mill, non-extruded
 2. Extruded using a single-screw extruder with minimal water input
 3. Extruded using a twin-screw extruder at low intensity
 4. Extruded using a twin-screw extruder at high intensity
- The basal and flax/field pea diets were based on wheat and soybean meal. The 4 experimental diets included one of the flax/field pea mixtures at 30% of the basal diet.
- T-cannulas were fitted to the distal ileum of the barrows. These contents were used for a 2-day collection of the ileal digesta. This, along with a 2-day collection of feces was used to analyze DM, ether extract, ash, and amino acids.

Results :

- Extrusion increased the ATTD of GE, ether extract and the DE content of the flax/field pea blend, and the AID of certain amino acids.
- Extrusion also tended to increase the AID of linolenic acid.
- Extrusion did not affect the apparent total tract digestibility, and apparent ileal digestibility of DM, OM, and CP for grower finisher pigs.

Conclusion :

- LinPro, which is produced by single screw extrusion, resulted in a trend for greater AID of linolenic acid and total fatty acids as compared to other methods of extrusion.
- Extrusion of the flax/field pea blend improved the digestibility of ether extract, energy, amino acids, and some fatty acids and thereby increased the content of DE and Omega-3 fatty acids.