

Nutritional Analysis of Liquid Feed and Liquid Feed Ingredients for Pigs

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Background

About 20% of grower-finisher pigs in Ontario are raised using liquid feeding systems. Currently, however, there is only limited nutritional information available for these diets and ingredients. Dry matter analysis can be used to evaluate the accuracy of the feed delivery system. Fermentation of liquid feed will decrease pH, which may limit the growth of deleterious microorganisms. Volatile fatty acids from carbohydrate digestion or fermentation lower pH and may benefit gut health in pigs.

Objective

The purpose of this study was to fully evaluate complete diets and the individual liquid feed ingredients for nutritional value.

Results

- For complete liquid feed, dry matter content ranged from 14.5 to 24.5%, while the average content in the dry matter was 21% protein, 5% fat, 6% ash, 0.56% Ca, 0.70% P and 0.30% Na. Protein and fat contents were higher in liquid feed than dry feed. The low Ca to P ratio in liquid feed is below the target ratio of 1 suggesting that P levels are too high in several samples. This is an environmental concern and increases feed costs unnecessarily. The Ca to P ratio in dry feed was 1.3.
- Across farms, the dry matter content in samples taken from feeders differed from that in the mix tank by between 0.2 % and 74%. A reasonable target is to have this difference smaller than 5 %, e.g. 22% dry matter in the mix tank and between 20.9% and 23.1% dry matter at the feeders.
- Nutrient profiles differ substantially in whey samples between suppliers and between samples from the same supplier, particularly in dry matter and protein content. Profiles of several nutrients for bakery and buttermilk appear to be highly variable while CDS and brewer's yeast show relatively small variability between samples.

Take home Message

Nutrient variability in co-products should be monitored routinely and ration formulation altered where appropriate.

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