High oil corn provides more energy and amino acids to the pig.

The DE content of high-oil corn was 5% higher than regular corn. Corn DE content could be predicted using gross energy (GE) or oil content. High oil corn is clearly a source with a high DE content.

Digestibility of energy and amino acids of high-oil corn has not been characterized thoroughly or related to chemical characteristics. Thus, the objective was to compare four near-isogenic sample-pairs of high-oil and regular corn and one standard corn sample for chemical and nutritional characteristics.

In high-oil versus regular corn, oil content was 4.2% higher (9.1 vs 4.9%), resulting in a 6% higher GE content (4553 vs 4589 kcal/kg DM), and protein content was 9.5 versus 9.1%, acid-detergent lignin 0.51 versus 0.41%, and starch 68.2 versus 71.3%.

Total tract energy digestibility was 1.1% lower (87.4 versus 88.3%) in high-oil versus regular corn; however, ileal DE content was 4% higher in high-oil versus regular corn (3660 versus 3503 kcal/kg DM).

In Figure 1, equations to predict corn GE, DE, and ileal DE content using corn oil content are presented. The figure clearly illustrates the large range in corn oil content and the positive effects of increased oil content on corn DE content.

Apparent ileal digestibility of lysine was 2.4% higher in high-oil versus regular corn (64.0 versus 61.6%), although less difference was observed in standardized digestibility of lysine (76.3 versus 75.5%). The increase in oil content within each near-isogenic sample pair was related (R² = 0.47) to an increase in apparent ileal lysine digestibility.

In summary, feeding high-oil versus regular corn does result in more energy and amino acids that are available to the pig to support metabolic functions.

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