



Prairie Swine Centre E-Zine

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Optimizing Dietary Energy

Feed efficiency is a complex production target because it is influenced by such a wide range of factors such as feed composition, barn environment, and pig behaviour. In a recent webinar put on by the Prairie Swine Centre and the Farm Leadership Council, Dr. John Patience of Iowa State University discussed feed composition with a specific focus on dietary energy and how it impacts feed efficiency.

Feed costs take up a large portion of a budget, sometimes as high as 70% of total costs. Within feed costs, dietary energy is by far the most expensive component of feed composition. Patience says energy costs can make up 86% of diet costs which would make energy costs as high as 60% of a total operational budget. With such a large part of the budget going towards energy it is important to optimize its use to increase feed efficiency. Although dietary energy comes from four different sources and is used for three different types of growth, making it complicated to express and optimize.

Energy is mainly used for lean and fat growth, but a portion of energy is used for maintenance. The amount of energy a pig puts towards maintenance is around 25-35% of its total energy intake. When a pig encounters stress from its environment it will use more energy for things like keeping warm, or stimulating its immune system. By improving environmental factors like temperature, social encounters, and cleanliness, the amount of energy that a pig uses for maintenance will decrease, and a higher portion of energy can go towards productive growth, which will improve feed efficiency.

Increasing energy in a diet almost always improves feed efficiency, but with energy being so expensive, the improvement may not necessarily increase returns per pig. Patience describes a study in which pigs were raised to a target weight while being fed one of four diets, each with different amounts of energy. It was found that although feed conversion was better, and days to market was less, in the high energy diet, the low energy diet had such low feed costs that its returns per pig was better than the high energy diet. One thing to be aware of with a low energy diet is there will be an increase in feeder visits, so a facility must be able to handle an increase in feeder capacity to achieve increased incomes from a low energy low cost diet.



More information on this topic and others related to feed efficiency can be found in our PorkInsight database found on our website at www.prairieswine.com/advanced-search/

Response of Growing-Finishing Pigs to Dietary Energy Concentration <http://www.prairieswine.com/response-of-growing-finishing-pigs-to-dietary-energy-concentration/>

Strategic use of feed ingredients and feed additives to stimulate gut health and development in young pigs <http://www.prairieswine.com/strategic-use-of-feed-ingredients-and-feed-additives-to-stimulate-gut-health-and-development-in-young-pigs/>

Dr. John Patience, Dietary Energy and Feed Efficiency in Swine <http://www.prairieswine.com/dietary-energy-and-feed-efficiency-in-swine/>