Feed-a-Gene



Adapting the feed, the animal and the feeding techniques to improve the efficiency and sustainability of monogastric livestock production systems

FeedUtiliGene

Nutrient partitioning modules to understand feed use mechanisms in pigs

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PROBLEM & OBJECTIVE

Better understanding makes a more efficient problem solving. Nutritional models provide insight to animal x feed interaction, therefore they are useful to evaluate nutritional concepts and to develop feeding strategies. There are only a few models freely available as a hands-on-software: therefore, our aim was to develop a software tool that integrates models predicting the nutrient partitioning in growing and fattening pigs.

Feed sequence plan Single High CP Dody Weight and Cumulative Feed Intake Initial values 0.01 200 20 30 25 Lower limits 0.0002 50 10	FI-BW data file	sample_data_set_2	BW CFI Daily FI BW Cumulative FI
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THE MODULES

The basis of nutrient partitioning modules of FeedUtiliGene is the InraPorc model that was extended by different additional models:







phosphorus utilization and excretion for low environmental footprint

> Fatty acid module Prediction of dietary fatty acid distribution and of fatty acid composition of the pig at slaughter weight



Feed intake module Estimation of constraints for feed intake: temperature, phosphorus supply, gastro-intestinal tract capacity, stocking density

APPLICATION

- Prediction of nutrient partitioning and performance at different feeding strategies, and estimation of dynamic nutrient requirement of pigs with different growth characteristics
- Educational tool to demonstrate concepts and visualize interactions among animal, feed and environment.
- Tool for geneticists and nutritionists in R&D activity.

Feed-a-Gene Feed-a-Gene is a European H2020 project involving 23 partners which aims to adapt feeds, animals and feeding techniques to improve the efficiency and sustainability of pig, poultry and rabbit production systems. It is coordinated by INRAE (France), started in March 2015 and will last 5 years. The project aims to reduce the environmental impact of monogastric livestock production by improving and diversifying animal diets and feed technologies and by integrating new selection criteria for these animals. The Feed-a-gene project further aims to develop new management systems for precision feeding and precision farming and to evaluate the overall sustainability of the different management solutions proposed in the project.





