mEAT quality

Practice Abstract

Agri-food industry by-products and functional additives for pig feeding

APPLICABILITY

Theme/Keywords

By-products, agri-food industry, food waste materials, nutrition, pig

Context

Animal growth performance and meat quality improvement

Geographical coverage

Worldwide

Required time

Time needed to prepare animal feed mixture and possible purchase/preparation of feed additives

Period of impact

Whole production, i.e. grower and finisher phases (fattening period)

Equipment

Feed mixers

Best in

Conventional husbandry, but applicable in all systems: intensive, extensive and organic production

Figure 1: Dry apple pomace (Source: D. Łodyga, Poznan University of Life Sciences)

Problem

Pigs can produce valuable human edible proteins. However, production requires large amounts of plant proteins to feed the pigs that could also have been used for human food consumption. Can we reduce this food-feed competition?

Solution

Pigs can be good waste converters. Feeding agri-food industry by-products can help to reduce waste while making valuable proteins available for human consumption.

Benefits

Food waste can be reduced by many tons per year and converted to valuable feed for animals. This reduces the need for arable land, energy and water for animal feed production.

Practical recommendations

High quality and proper optimisation of the diet of fattening pigs can improve their growth parameters and meat quality.

Pig feed should be palatable and varied to facilitate its consumption and meet animals' nutritional needs.

By-products of the agri-food industry can reduce feeding costs and positively impact porcine health, welfare and meat quality parameters. The use of several percent food waste materials (such as residues of flax seeds, milk thistle, dried apple or dried chokeberry) in the pigs' diet during the entire fattening period has been found to result in an increase in daily body weight gain, an improved feed conversion ratio and a higher final weight.

The additional source of fibre from by-products of the agri-food industry in the diet of fattening pigs also improves the feeling of satiety, which affects the well-being and meatiness of pigs, as well as the protein content in meat, without impairing carcass and meat quality parameters.

Moreover, enriched diets can reduce drip loss in fresh meat, which is a positive effect considering the quality of the meat.

Practice Abstract

On-farm application

System approach

Agri-food market by-products can be obtained as affordable post-production waste. To see the results, it is only necessary to incorporate small percentages of the by-products in a balanced feed mixture.

Figure 2: Pulawska breed pigs while eating (Source: D. Łodyga, Poznan University of Life Sciences)

FURTHER INFORMATION

Further readings

1. Apple pomace is healthy and contains many important nutrients and active substances. A comprehensive analysis of the composition, health benefits, and safety of apple pomace
2. Milk thistle improves metabolism and growth of pigs. Impact of milk thistle (Silybum marianum L.) seeds in fattener diets on pig performance and carcass traits and meat
3. Agri-food waste can be used as feed components. Effect of the inclusion of food waste in pig diets on growth performance, carcass and meat quality
4. Agri-food by-products contain natural antioxidants which promote health. Natural antioxidants as food and feed additives to promote health benefits and quality of meat products: A review

About this practice abstract and *mEATquality*

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mEATquality: The *mEATquality* project aims to provide consumers with better-quality pork and broiler meat and animals with a high level of welfare by developing scientific knowledge and practical solutions together with farmers and chain partners.
The *mEATquality* project, an H2020 project, is coordinated by Wageningen Research (The Netherlands) and is a multidisciplinary team of 17 partners organisations representing 7 EU countries. The project is running from October 2021 to September 2025

Project website: www.meatquality.eu/
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This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 101000344. This practice abstract reflects the author's views and does not necessarily reflect the views or policy of the European Commission. Whilst efforts have been made to ensure the accuracy and completeness of this document, the European Commission shall not be liable for any errors or omissions, however, caused.