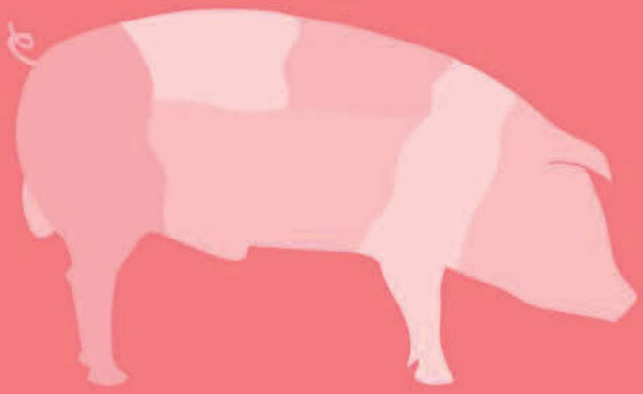

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Life cycle assessment of two diets for finishing Bísaro boars - a case study to evaluate sustainability.

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Improving animal feed efficiency to reduce Greenhouse Gas Emissions (GGE) is part of the support to be granted under the new Common Agricultural Policy Strategic Plan for Portugal. Pig producers do not have many alternatives to reduce the carbon footprint impact of their pork as the Feed Industry (FI) that supplies them still buys low-cost ingredients from the world market without considering their environmental impact. Encouraging increased use of by-products and local feeds could lead to the emergence of more sustainable systems. The ECO-PIG project completed a life cycle assessment (LCA) of two diets (with Agri-footprint 6.3 and Ecoinvent 3.9.1) for finishing Bísaro boars. Two, isoenergetic, isoproteic, and equally aminoacid balanced diets were compared: a control diet (commercial mix) with a new diet, rich in by-products and local feeds (sugar beet pulp, dried malt culms, peas, and lupins). Boar performance (2 groups n=10) was not significantly different. The LCA shows that per tonne of the final feed mix, cereals are the ingredients with the greatest environmental impact for both diets. This is not only because cereals are used in large quantities in both diets, but also because national production is very scarce. Their transport to the FI is long, resulting in a significant overall negative impact. The cereals' need for water and fertilisers, as well as the occupation of agricultural land, is high. The LCA analysis reveals that by-products resulting from the food industry, such as beet pulp or malt rootlets, have a low impact on the environment and their price is favourable. Thus, the mix based on by-products has the lowest impact and higher sustainability. We demonstrate that limiting the transport of ingredients for the new mix to a maximum of 400 kilometres distance from origin to the FI (shorter when available) would substantially lower the impact on GGE.

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