Life Cycle Assessment of pig production systems of the Noir de Bigorre pork chain

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Id: 1369
Key: 00028683AF
Themes: Production Systems – Management, natural resources and sustainability
Presentation: Oral Communication

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Keyword's: Gascon breed, Life Cycle Assessment, Sustainability

Abstract

Outdoor pig production systems relying on local pig breeds may cope with environmental and socio-economic challenges of animal production. They produce high quality products with added economic value and mainly rely on local feed resources. Within the European TREASURE[1] project, we aimed at evaluating the sustainability of these systems. We conducted the Life Cycle Assessment (LCA) of the Noir de Bigorre (NDB) pig production systems located in South West of France. The environmental impacts were calculated at farm gate and expressed per kg live pig and per ha land use. From surveys on 25 farms of the NDB pork chain and data collected by the chain, we estimated the flows and average live weights of animals produced as well as the quantities of feeds distributed to the animals. Formulas of the complete feeds were collected from manufacturers. Feed ingredients impacts came from the ECOALIM dataset of the AGRIBALYSE® database. Climate Change (CC), Acidification (AC), Eutrophication (EU), Cumulative Energy Demand and Land Occupation impacts were in the range of the impacts of outdoor systems previously studied. CC impact per kg live pig was higher than in intensive systems due to the higher amount of feed needed to reach the slaughter weight. AC and EU impacts per ha of land were relatively low. NDB pig farming systems exhibit LCA impacts typical of pig extensive and outdoor systems. Further studies within the European TREASURE project will also give insights on the economic and societal dimensions of sustainability of these systems.

[1] "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 634476 (Project acronym: TREASURE). The content of this paper reflects only the author's view and the European Union Agency is not responsible for any use that may be made of the information it contains."