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P66. Environmental impacts of duck *foie gras* production in 3 contrasting systems

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5ITAVI, 4CTCPA, 2ASSELDOR, 3INRA, 1INRA

The *foie gras* sector has established two processes to certify production conditions for consumers: Red Label (RL) and Protected Geographical Indication (PGI) which differ of standard (STD) system by a longer rearing and overfeeding periods and specification on geographic origin of resources used (only for PGI). *Foie gras* is a luxury product whose image should not be tarnished by high environmental impacts. The aim of this work was to compare with LCA method, the environmental impacts of duck *foie gras* production in these 3 systems at the slaughter house gate.

Attributional LCA were based on average production systems (experimental and bibliographic data or survey for primary data, see Table 1; INRA and Ecoinvent database v2.2 for secondary data, SimaPro 8.1.0.60 software). Seven impact categories were calculated using mainly CML2 baseline v2.04 method for 1t of *foie gras* and using an economic allocation approach: eutrophication potential (EP, kg PO₄³⁻ eq.), global warming potential (GWP, kg CO₂ eq.), acidification potential (AP, kg SO₂ eq.), terrestrial ecotoxicity (TE, kg 1,4- DCB eq.), primary energy use (PEU, MJ; CED v1.05 method), Water Use (WU, m³) and land occupation (LO, m² .year).

The potential environmental impacts of *foie gras* production are rather similar for STD and PGI systems (<5% of difference for all impacts) but higher for RL system (+9 to +24% depending on impacts, Table 1), except for AP and CED (difference with STD or PGI system <5%). This is due to longer production process and higher feed intake. Regarding the steps of the production process, the major contribution to the potential impacts are rearing (36 to 63%) and/or overfeeding (28 to 57%) periods. Considering the class of inputs, the major contribution is feed (>56%) except for AP, mainly explained by manure management (>75%).

Present results suggest that the RL system offers to consumers a product with higher sensory quality but this is linked to slightly higher environmental impacts. On the opposite, the PGI system guarantees to consumers the respect of specifications concerning production process without increase in environmental impacts. This work shows that the management of feed and manure during the rearing and overfeeding periods are the most relevant ways to reduce environmental impacts of duck *foie gras* production.