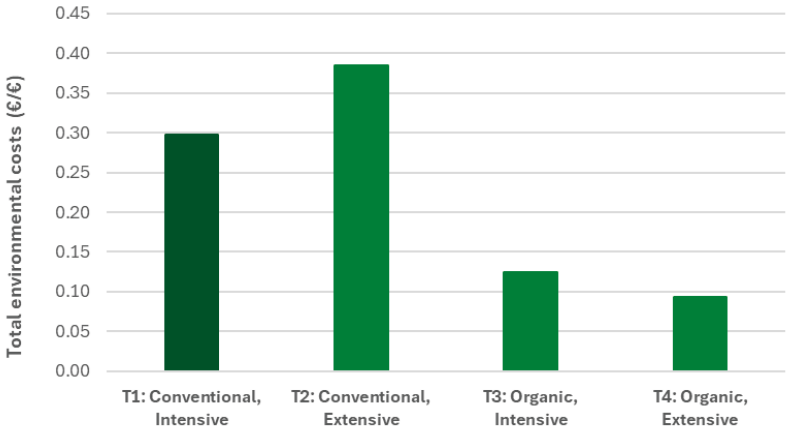
THE WHAT AND WHY

Environmental costs of vegetable production in Belgium: comparison between conventional and organic farming

Growing vegetables in Belgium requires a balance between profitability and environmental sustainability. To achieve this, it is important to analyze how different agricultural practices, ranging from intensive conventional to extensive organic systems, affect environmental costs (€ impact per € gross margin for the farmer). We aim to find out which practices reduce environmental impact without compromising profitability. This should make it easier for farmers to adopt these practices and provide valuable information for policy decisions to promote them.

The environmental cost-benefit analysis (e-CBA), which is based on life cycle analysis (LCA), allows the comparison of different agricultural management systems: (1) intensive conventional management (spading, mineral fertilizers); (2) extensive conventional management (reduced tillage, cover crops, compost and chemical fertilizers); (3) intensive organic management (spading, manure and slurry); and (4) extensive organic management (reduced tillage, compost).

This approach allows the environmental costs of each strategy to be compared in monetary terms (€ impact per € produced). The results show that extensive organic management is the most sustainable and profitable, with environmental costs 69% lower than intensive conventional farming. In contrast, extensive conventional management has the highest environmental costs (0.39 €/€), showing that the combination of compost and chemical fertilizers is not an efficient strategy.



1. Environmental costs (€ per € gross margin for the farmer) for each practice tested.

KEYWORDS

Environmental costs, impacts, vegetables production, organic farming, reduced tillage, cover crops

AUTHORSHIP

Miguel Rodríguez Méndez, GEN group, ECOBAS, Universidade de Vigo, Spain
Marina Gómez Rodríguez , GEN group, ECOBAS, Universidade de Vigo, Spain

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 817819