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BioValue

Practice Abstract

Environmental Impact Assessment of Underutilized Crops

The public Deliverable 7.3 of the BIOVALUE project assessed the environmental performance of underutilized crops (buckwheat, lathyrus, eggplant, sonchus, lentil, tomato, cucumber) across European pilot farms using an adjusted Life Cycle Assessment (LCA). Key findings show significant variations in energy inputs, greenhouse gas (GHG) emissions, and carbon footprints. For instance, Turkish buckwheat farms used lower energy inputs, while German lathyrus farms achieved higher energy efficiency. Greenhouse cultivation, especially for eggplant and cucumber, often reduced environmental impact compared to open-field systems, though fertilizer and fuel use were major contributors to emissions across all crops.

Practical Recommendations:

Farmers can optimize sustainability by selecting crops suited to local agroecological conditions, reducing fertilizer and fuel use, and adopting greenhouse systems where feasible. For example, greenhouse eggplant cultivation in Germany showed lower energy inputs and carbon footprints. Implementing these practices can reduce costs, increase yields, and minimize environmental impact. Certification of lower carbon footprints can also open new markets, boosting profitability for farmers.

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