

P17. Eco-design in fruit and vegetable farming systems: moving forward in the AGRIBALYSE program

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A large number of LCA studies for agricultural products have been carried out over the last few decades, producing benchmark values and feeding databases such as AGRIBALYSE (www.ademe.fr/agribalyse). These studies enabled the identification of food production, highlighting the importance of sustainable farming systems, and showing more specifically the high impact of some agricultural operations. AGRIBALYSE partners now feel that the focus should move further towards defining and assessing with LCA innovative agricultural practices/systems, which would ensure both environmental and economic performances.

Several projects on fruits and vegetables are ongoing, following a similar approach based on AGRIBALYSE methodology. Innovative practices from agronomic research and farmers are identified, focusing on the ones targeting environmental hotspots. These practices are then assessed (and possibly optimized), and potential environmental gains communicated to the stakeholders. At the end, the “Eco-designed product“ LCIs will be included in the AGRIBALYSE database, in unit format.

For now, analysis is ongoing to provide a benchmark for the 10 most consumed fruits and 10 most consumed vegetables in France (table 1). In addition, analyses of eco-efficient production systems are being carried out. Work on apples and tomatoes is the most advanced, testing new heating systems and orchard disease management. In depth work with pineapple production on Réunion Island (France) is also ongoing. Such projects could be replicated for many different kinds of products and conditions. We hope that these projects will contribute significantly to more sustainable practices, and to a European market for green products.

Table 1. Main fruits and vegetables consumed in France and available dataset

| Vegetables | LCI source | Fruits | LCI source |
|-------------|---------------|-----------------|---------------|
| tomatoe | AGRIBALYSE v1 | Apple | AGRIBALYSE v1 |
| Carrot | AGRIBALYSE v1 | Banana | WFLDB |
| Melon | AGRIBALYSE v2 | Orange | WFLDB |
| Salad | AGRIBALYSE v2 | Clementine | AGRIBALYSE v1 |
| Onion | AGRIBALYSE v2 | Peach/Nectarine | AGRIBALYSE v1 |
| Zucchini | AGRIBALYSE v2 | Pear | AGRIBALYSE v2 |
| Cauliflower | AGRIBALYSE v2 | Table grapes | - |
| Cucumber | AGRIBALYSE v2 | Strawberry | AGRIBALYSE v2 |
| Endive | AGRIBALYSE | Apricot | WFLDB |

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|------|------------------|-------|-------|
| | v2 | | |
| Leek | AGRIBALYSE v2 | Lemon | WFLDB |

