

Egg Farmers of Alberta Environmental Footprinter

General description of the tool

Category	Outcome-based
Objective	To establish a credible and transparent environmental profile of egg production in Alberta accounting for current farming practices
Geographical applicability	Alberta
Functionalities	Hotspots identification, alternative scenarios testing, provide a footprint value/metrics
Target audience	Farmers
Developers	Groupe AGÉCO (formerly Quantis) - latest update: 2013
Format	Online tool (with private access) and possibility to obtain the tool on a USB key
Cost (tool and data)	Free - for Alberta Egg producers only
Past or current users	Alberta egg farmers

Commodities covered

Egg

BMPs covered

None

Indicators covered

GHG emissions	Eutrophication
Land use	Energy use
Water use	Acidification
Fossil fuel depletion	



Data inputs

Data requirements	Primary data required	Default values
Environmental conditions	No	No
Crop management	Feed production: % of crop	No
Carbon sequestration/storage	No	No
Livestock	Quantity and size of egg produced, quantity of birds and placement dates, feed ration and ingredients, barn size, water ration, flock management practices	No
Energy use	Electricity and gas consumption	National average for energy consumption
Primary processing	No	No
Water	Water use	No
Transport	No	No
Others	No	No

Scope Farm level Supply chain

Ease of use for the data collector Easy, but may require specific documentation, quick to fill - Qualitative data entries can be easily completed by the user. Data on energy use (electricity and fuel) are usually easily accessible to producers.



Modelling methods

- Consistency of the model with the goal and scope of the tool** Consistent - the model allows the calculation of 5 environmental indicators to provide an environmental profile of egg production
- Transparency and quality of documentation** Guidance document: Yes - instructions are given directly in the tool
Methodology document: Yes - background information on the methodology (life cycle analysis, data and hypothesis and limitations) is available to the users
- Conformity of the methodology with the current state-of-the-art agronomic and environment sciences** Consistent - uses mainly primary data from the farmers and Egg Farmers of Alberta to represent adequately the reality and uses LCA methodology that is widely recognized

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- 📍 **Methodology** Based on LCA methodology and assessed potential environmental impacts with IMPACT 2002+ method (climate change, resource depletion, human health, ecosystem quality and water withdrawal)

The models for methane and NO2 emissions associated with the hens end of life due to composting are based on the IPCC guidelines (2006, Biological Treatment of Solid Waste).
 - 📍 **Dataset sources used for modelling** Primary data were provided by Eggs Farmers of Alberta (bird strains, eggs produced, cage type, etc) and by 35 farmers through a mail-in survey in 2011
Secondary data were adapted from ecoinvent database (crop production, electricity at grid, natural gas, fuel and transportation)

📍 **Outputs / Results**

- 📍 **Results** Detailed summary of results in tables Detailed summary of results in graphs
- 📍 **Analysis** Summary of main hotspots Comparison with alternative scenarios

📍 **Limits of the tool/model**

Some data such as the hatchery stage was based on literature studies or datasets describing European operations not necessarily representative of the Alberta context
Use of economic allocation for co-products
LCIA methodology IMPACT 2002+ does not characterize the wide array of emissions released to soil, air and water from processes. However, it does characterize the most well-know pollutants and thus provides the best estimate to evaluate environmental impact.