

Comparing economic and environmental performance of dairy farming and suckler cows husbandry

Language: English or German

Contact: Till Kuhn (till.kuhn@ilr.uni-bonn.de)
Dr. Wolfgang Britz (wolfgang.britz@ilr.uni-bonn.de)
Prof. Dr. Karin Holm-Müller (karin.holm-mueller@ilr.uni-bonn.de)

Background:

Dairy and suckler cows husbandry are two grassland based cattle farm systems with distinct differences in economic and environmental performance.

At the ILR, a highly detailed, dynamic, bio-economic model at farm level has been developed, called DAIRYDYN. Beside economic performance, the model displays greenhouse gas (GHG) emissions at farm level and calculates (marginal) abatement costs of GHG emissions on dairy farms. The model is currently expanded to further farm types as well as environmental impacts, such as NH₃ emissions and P leaching.

In this master thesis, the model should be expanded to cover suckler cows. This expansion will allow quantifying the environmental impact and economic performance of suckler cows compared to dairy farming. Furthermore, it can be analysed, under which conditions in the model a switch between the two systems is economically feasible. The modelling work will be done in close collaboration with the DAIRYDYN working group at ILR.

The exact focus of this master thesis can be adjusted to the student's preferences, but an interest in modelling and suckler cows' husbandry is required. Some German language knowledge required to work with German farm management hand books. It should be possible to have the master thesis counted for the majors Resource and Environmental Economics, Agribusiness and European and International Agricultural Policy.

Objective:

Comparing the economic and environmental performance of dairy and suckler cows husbandry at farm level under German conditions

Approach:

- Short literature review on (selected) environmental impacts and economic performance of dairy and suckler cows husbandry
- Literature review on the typical production parameters of suckler cows husbandry in Germany
- Developing a concept to integrate suckler cows in the model DAIRYDYN; modelling in close collaboration with the DAIRYDYN working group
- Statistically descriptive analysis of results created by the model

References to start:

LENGERS, BERND; BRITZ, WOLFGANG (2012): The choice of emission indicators in environmental policy design: an analysis of GHG abatement in different dairy farms based on a bio-economic model approach. *Review of Agricultural and Environmental Studies* 93 (2), pp. 117–144.

NGUYEN, THU LAN T.; HERMANSEN, JOHN E.; MOGENSEN, LISBETH (2010): Environmental consequences of different beef production systems in the EU. *Journal of Cleaner Production* 18 (8), pp. 756–766.