

Applied climate protection – Improving the ecological footprint of compound feed using PEFCR and GFLI

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AGENDA

- ▼ PEFCR and GFLI
- ▼ Applied PEFCR study on pig husbandry
- ▼ Résumé



advantages

- Standardised method to measure the environmental footprint of feed
- “Exceeds” carbon foot-printing and includes all relevant environmental indicators
- Results can be certified by TIC (Testing, inspection, certification) companies
- Allows (EU-wide and potentially global) comparability of environmental foot-printing for feed
- Ideally, the PEFCR can be directly included in feed recipe optimisation

challenges

- Complex method that requires LCA expertise at feed manufacturers
- Manifold results that need to be simplified for producers and farmers
- Certification induces costs for producers and/or farmers
- Comparability of results necessitates a common data base for the environmental impacts of feed ingredients (→ GFLI !)
- Environmentally-friendly optimisation of feed recipes lacks acceptance among farmers

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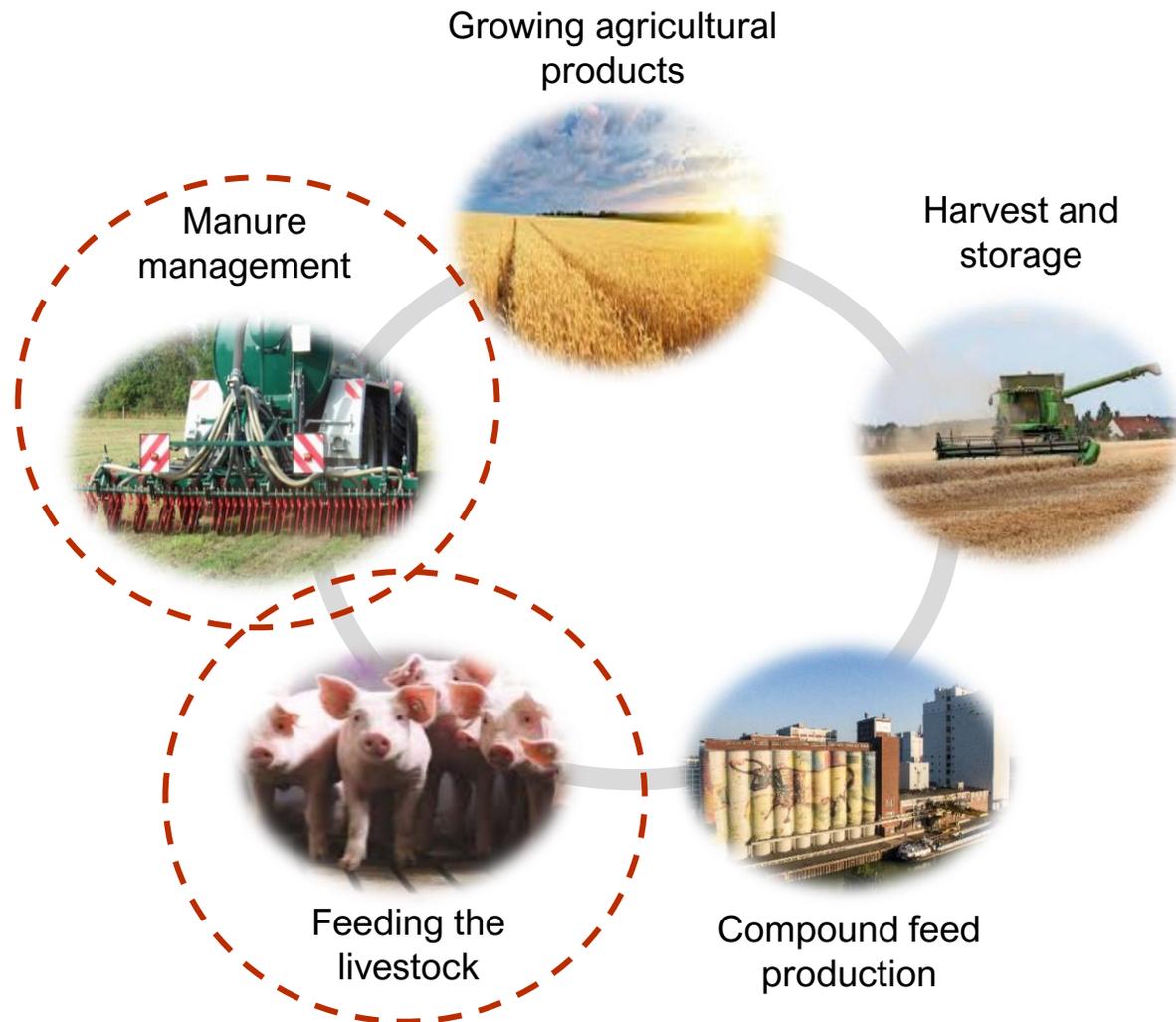
PEFCR-conform study on pig husbandry in Germany

(Results of an AGRAVIS study on 25 pig fattening farms)



- ▼ Comparing the **ecological** and **economical footprint** of different feed concepts using an **online tool**

- ▼ **Outdated feed concepts** (e.g. compound feed with invariable crude protein content)
- ▼ **Advanced feed concepts** (e.g. reduced crude protein content while adding sythetic amino acids)



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Primary data (farms and feed manufacturers)	Secondary data (literature, science, chambers of agriculture, associations etc.)
Number of pigs	Type of housing (incl. energy and water consumption)
Fattening phases (incl. weights)	Costs of upstream products (e.g. cereals and oilseeds)
Share of compound feed and groundbait	Production costs and energy consumption of feedmills
Compound feed recipes	Marketing and distribution costs
Feed conversion ratio	Transport distances
Mortality	Amount of liquid manure (m ³)
Amount of disposed liquid manure	Type of slurry application
...	...

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Farm	Reference year	Ecological footprint	Nitrogen emissions	Phosphor emissions	CO ₂ emissions	Acidification	Land use
1	2007	-12.6%	-8.3%	-7.2%	-8.1%	-10.41%	-11.05%
2	2010	-16.1%	-18.5%	-19.5%	-14.6%	-25.62%	-1.52%
3	2011	-14.2%	-20.0%	-14.2%	-14.6%	-28.85%	-3.00%
4	2012	-24.4%	-19.7%	-20.9%	-21.0%	-47.38%	-12.36%
5	2013	-18.2%	-27.2%	-22.9%	-24.3%	-24.07%	-9.55%
6	2014	-15.9%	-14.4%	-17.0%	-10.0%	-23.62%	-16.70%
7	2014	-3.9%	-11.2%	-1.1%	-6.6%	-31.45%	+12.00%
8	2014	-14.0%	-16.5%	-12.7%	-14.4%	-29.33%	-1.30%
9	2014	-10.1%	-11.2%	-4.7%	-4.6%	-28.90%	-3.47%
10	2014	-9.2%	-6.7%	-12.3%	-2.8%	-11.99%	-1.83%
11	2014	-13.3%	-9.1%	-13.8%	-4.0%	-15.73%	-18.42%
12	2014	-8.5%	-15.9%	-12.3%	-6.8%	-28.76%	+10.79%
13	2014	-19.1%	-14.0%	-55.7%	-6.8%	-29.54%	+8.55%
14	2014	-11.1%	-12.1%	-7.5%	-5.9%	-24.77%	-1.24%
15	2014	-5.6%	-8.7%	-3.8%	-7.0%	-16.89%	+8.70%
16	2014	-6.8%	-12.2%	-8.7%	-6.4%	-17.24%	+8.66%
17	2014	-26.5%	-31.4%	-28.0%	-18.0%	-45.35%	-12.06%
18	2014	+3.1%	-9.9%	+4.4%	-4.0%	-19.43%	+22.21%
19	2015	-20.5%	-16.6%	-22.8%	-16.8%	-15.02%	-28.46%
20	2015	+3.5%	+9.4%	-3.6%	-0.9%	+12.54%	+2.63%
21	2016	-5.6%	-2.7%	-4.8%	-7.6%	-8.51%	-8.45%
22	2016	1.4%	-17.1%	-12.7%	-3.6%	-18.26%	+11.01%
23	2017	-15.3%	-8.9%	-18.5%	-4.0%	-20.05%	-20.22%
24	2017	-5.2%	-1.1%	-0.2%	-0.5%	-5.32%	-12.15%
25	2016	-3.6%	1.4%	-5.4%	-8.0%	-7.73%	+3.04%
Mean		-10.9%	-12.1%	-13.0%	-8.8%	-21.4%	-3.0%
Maximum		-26.5%	-31.4%	-55.7%	-24.3%	-47.4%	-28.5%



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- ▼ Innovative feed concepts have significantly less environmental impacts*!
 - ▼ Reduced **land use** (↓3%)
 - ▼ Reduced **nitrogen emissions** (↓12%)
 - ▼ Reduced **phosphor emissions** (↓13%)
 - ▼ Reduced **acidification** (↓21%)
 - ▼ Reduced **CO2e emissions** (↓9%)
- ▼ On average, the ecological footprint of the 25 pig fattening farms is reduced by **11 percent** via innovative feed concepts!



*Based on the study's underlying assumptions and feed formulas. The reference value is compound feed production for 1,000kg pig liveweight.

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in general

- ▼ High demand for environmentally-friendly feed concepts – from both upstream and downstream agents of the agricultural value chain
- ▼ Ecological foot-printing is a complex undertaking – but allows companies to verify their climate protection measures for stakeholders

regarding the PEFCR and GFLI

- ▼ The PEFCR are applicable and verifiable at both feed manufacturer's and farm level
- ▼ Both the GFLI and PEF-conform web-tools for calculating the ecological footprint of feed should be accessible as soon as possible



Thank you for your attention!

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