

Sharing knowledge and experience

A key component to make agriculture sustainable

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Who we are

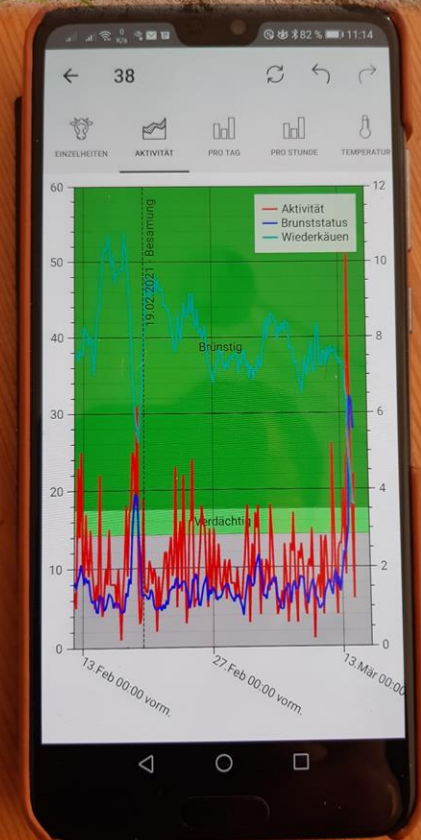
- Kirsten Wosnitza + Gerd Albertsen, Northern Germany
- 32 hectare crops, 55 hectare pasture (conventional)
- 120 dairy cows plus calves and heifers
- 1,21 Mio kg milk/year
- 7 months intensive grazing
- Active member Bundesverband Deutscher Milchviehhalter BDM
Arbeitsgemeinschaft bäuerlicher Landwirtschaft AbL
- EIP Agri OGs animal welfare, grazing, pasture management
- EIP Agri Focus group on robust and resilient dairy production

Core challenges of animal husbandry

- Generating sustainable incomes
- New legal requirements in production (climate, water, emission, nature, pesticides, animal welfare, soil fertility, antibiotics, biodiversity)
- Competition on the world market
- Substitutes for milk and meat products
- Social acceptance



Are there sufficient
incentives for the
creation of innovations
for each challenge?



Do innovations require
a certain farm size?



BoniRob by Amazon + Bosch
Foto W. Haefeker

Minimize chemical pesticides – field robots

Minimize chemical crop protection

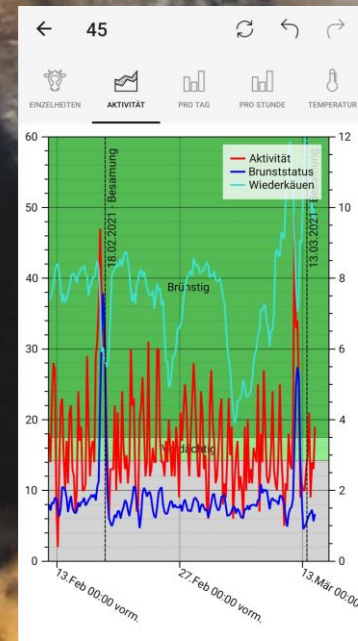
- Development of small, autonomously operating field robots
- Advantage: less pressure to the ground, pinpoint use of pesticides, low energy input, can work in small areas
- Can be used by farms of different sizes
- Interest for development: farmers, industry, research
- Requirements: open source projects, to prevent farmers' dependence on a few corporations (patents)

Combination: Small field robots can be a useful tool in a system of diverse crop rotations, mixtures and undersowing with the result of minimizing the use of pesticides and improving biodiversity.

Solution of problems or problem management?

Improvement of
cows' health
and fertility

- sensor technology



Improvement of cows' fertility, health and nutritional status

- Sensor technology

- Very successful management tool in larger high-yield herds
- Less use of antibiotics through early detection
- Reduction of animal losses

Alternative solution: Economically viable production system at lower intensity levels using less specialized and more robust COWS.

A black and white cow is grazing in a lush green field. The cow has a white face with a black patch around its eye and a yellow tag on its ear. In the background, a small bird is visible in the tall grass.

Who is interested in developing innovations?

Nature conservation and animal welfare

- Pasture based milk production ⁹

Pasture based milk production

- Decline of dairy cow grazing in Germany is rated negatively by nature conservation and animal welfare
- Grazing reduces inputs (machinery and energy input for harvesting, fertilizing, plant protection, sowing etc.)
- For pasture based milk production the farmer needs
 - Training, knowledge, advice
 - Fences, troughs, paths
 - Robust cows (medium milk yields, good body condition)

Industry shows little interest in developing innovations for pasture based milk production compared to indoor husbandry and feeding systems.

Who organizes and funds the development
of innovations for sustainable agriculture
in fields where industry shows little economic interest?



EU offers support for innovation

Operational Groups OG under the European Innovation Partnership EIP

- Focus on projects with practical relevance: Farmers, scientists, advisors and entrepreneurs benefit from mutual exchange
- „Bottom up approach“ requires farmers being part of OGs



Requirement for the success of OGs

- Farmers must be equal members of the OG (no „Alibi“ position) to have equal influence on the agenda of the project
- Farmers can receive institutional support in order to become lead partner of an OG with little bureaucratic effort
- OGs should not be a form of indirect research funding

EIP Agri Focus Groups are temporary on a specific subject

- Efficient way to pool European expertise and identify needs for research and innovation
- Problem: high language barrier for farmers to get involved in this process

What we need additionally in EIP Agri

- More focus on conflicting objectives (example animal welfare - climate protection - biodiversity) in OGs and FGs
- More support for the exchange between actors of the OGs on national and European level (organizationally and financially)
- Moderated forums on social media to collect questions and solutions from farmers

Horizon 2020 – EU framework program for research and innovation:

- To what extent are farmers' needs for innovation taken into account?
- How many links are really set between Horizon and EIP?



What Akis (Agricultural knowledge and Innovation system) is needed for

- Analysis on why dissemination and exchange of knowledge is failing in many cases
 - Development and support of individual strategies for member countries for dissemination and exchange of knowledge
- > Education, training and supervising systems are a prerequisite for the adaptation and implementation of innovations

Enabling innovation for sustainable agriculture

- Sustainable agriculture needs innovations beyond digital technologies and high-tech
- Strengthening the infrastructure for sharing knowledge and experience (horizontal and vertical level) is a key component
- Creating of financial resources for innovation projects, knowledge exchange and dissimulation of information
- Only with financial room to maneuver, farmers are able to contribute new ideas and techniques
- The conflicts of goals for sustainable agriculture question the path of specialization and intensification. There is need for innovation considering the importance of more diversified farming systems

Thank you for your attention

