Efficiency Check: WEB application to visualize linkage between management, housing conditions, animal health and profitability in dairy cattle


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Session: Management Tools to Support Circular Economy: Practical Herd Applications
What is EFFICIENCY?

„To produce with minimum input a maximum output“

Or as farmers say

„To do things right“
Results of a survey at farmers

Which areas are of interest for farmers for additional information?

- Economically of dairy farming
- Hints to cows with problematic health
- Health status of single cows
- Efficiency of metabolism of single cows
- Economically of single cows
- Evaluation of effort and benefit of changes in management of dairy cows
- Evaluation of costs and benefits of investments

![Bar chart showing the percentage of farmers interested in each area. The chart indicates varying levels of interest: total unimportant, rather unimportant, rather important, and absolutely important.](image-url)
Results of a survey at farmers

How important are these functions in a web applications?

- Simple, self-explanatory evaluations
- No additional documentation
- Import of dairy datas into the application
- Import of results of analyses from feeding ration
- Consideration of all interdependencies as far as possible
- Advisor should have access to this application
- Concentrat components of automatic feeding station should be importet
- Data of milking robot should be importet into the application
- Data of application should be importet into the milking robot

Efficiency Check: presented by Martin Gehringer (LKV Austria)
Target to the web application „Efficiency Check“

1. Calculation of key figures of single cows on farm and comparing (ranking) them
2. Analyses and key figures of the farm and comparison with other similar farms
3. Hints to existing risks on farm and prediction of the impact of increasing or decreasing of selected key figures
4. The farmer should get this data without any additional documentation
Development of „Efficiency Check“

- The project has been developed under the leadership of ZAR (Association of Austrian Cattle Breeders) together with practitioners (farmers, veterinarians, consultants, DHI staff) and scientists (European Innovation Partnership-project)
- Projectleader: Franz Steininger
- Project runtime: 4 years (1.1.2016-31.12.2019)
- The Efficiency Check is connected to the RDV (RinderDatenVerbund/Central Cattle Database) – existing data within RDV are used within this application
- Online tool
Data usage in the „Efficency Check“

Revenues

Costs

Feeding
- Type of ration
- Amount of concentrates
- DMI-Estimation

Health status
- Diagnoses of veterinarians
- Observations of farmers
- Prophylaxis

Fertility
- Insaminations
- Calvings
- Pregnancy tests

Milkrecording data
- Milk yield
- Milk ingredients
- Somatic cells count

Other
- Management information
- Changes in livestock
- Weight of Cows

Efficiency Check: presented by Martin Gehringer (LKV Austria)
Data analyses – comparison of cows

➢ This table can be sorted by clicking into the head of column.
➢ Most important key figure is Balance (exklusive stock exchange costs) per kg milk

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Efficiency Check: presented by Martin Gehringer (LKV Austria)
Prediction of reducing mastitis

Actual value of somatic cells and amount of acute mastitis

Target values of somatic cells and acute mastitis

Costs of actual situation

Lower costs because of increased milk yield and lower costs for treatment
Cumulative costs and yields of selected cows

Diagnosted mastitis

Cow is dry

Value of calf

Diagnosted flu

More than 1,000 € difference between 2 cows at same stage of lactation

Efficiency Check: presented by Martin Gehringer (LKV Austria)
Cows with more weight have a higher ground energy level → require more feed to produce same amount of milk.

Delaying on weight and energy-corrected-milk yield are big differences.

Energy-corrected-milk per metabolic living mass

Efficiency Check: presented by Martin Gehringer (LKV Austria)
Comparison between farms

Benchmarking included to analyse potential of improvement compared to similar farms
Thank you and have a great day!