

NEU.rind – A User-Friendly Digital Tool Applied for Sustainability Assessments of Austrian Dairy Farms

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The NEU.rind digital farm assistant provides dairy farms with a user-friendly yet comprehensive tool to assess sustainability in terms of efficiency, animal health, economics, and environmental impacts of milk production. It allows for a relatively simple on-farm application while maintaining analytical depth, enabling comprehensive benchmarking and tailored recommendations for farmers. Hosting the application in the central cattle database and integrating other relevant data sources minimizes data recording efforts. After pilot tests on 200 farms, NEU.rind is being systematically implemented by several Austrian dairies.

Analysis of pilot farm data identified three distinct farm clusters with varying sustainability characteristics, largely influenced by management strategies and site conditions. The first cluster consists of farms with high external concentrate feed imports, resulting in high feed costs, nitrogen loads, energy demand, and CO₂-equivalent emissions, especially per hectare. In contrast, another cluster with a high proportion of organic farms in less favorable areas, showing lower annual milk yields per cow but longer lifetime and fewer external inputs, is characterized by medium to high environmental impacts per kg of milk, however, low impacts per hectare. The third cluster includes mainly conventional farms in favorable areas, achieving high annual milk yields per cow with lower external inputs and reduced environmental impacts.

A key finding is the trade-off between product-based and hectare-based sustainability performance. High-intensity farms perform well per kg of milk but exhibit higher per-hectare impacts and vice versa. Some farms, particularly those facing site disadvantages, do not perform well in both reference (functional) units in one or more sustainability aspects. For such farms, the NEU.rind tool provides tailored recommendations to enhance sustainability.

By offering a practical yet holistic sustainability assessment, NEU.rind enables dairy farmers to validate and enhance their farms' sustainability performance, supporting the transition to more sustainable dairy farming across diverse production systems.

Keywords: Sustainability assessment, benchmarking, digital tool