

GrazyDaiSy final project summary



Project purpose

Organic dairy farming is based on grazing systems and with a strong focus on health promotion, but many organic farms search for solutions to rely less on imported concentrate feed, as well as the use of antibiotics and anthelmintics. Most calves are removed from their dam one day after birth, despite emphasis on naturalness. GrazyDaiSy was built on the aim to develop innovative, resilient and sustainable organic grazing-based dairy systems, and make a better integration of cows and their calves, e.g. allowing mother-infant contact, and to promote health to minimize anthelmintic and antibiotic use. GrazyDaiSy was based on participatory on-farm research, and used an interdisciplinary approach. A cross-cutting focus of GrazyDaiSy was on perceptions, visions, and barriers related to transition and use of novel strategies, as well as their daily practices, mostly focused on CCC systems, but also more broadly. Based on interview with farmers and other actors, perceptions, visions, barriers and experience was analysed in relation to views from the cow, the calf, the system and the human actors, emphasizing nutrition, care and learning aspects of dam-rearing and CCC systems. Case studies and interviews were analysed using change and transition theories in a range from behavioural and motivational individual change to community of practice and larger transition theories, and concluded that all levels of change needs to be considered when making radical systemic changes in well-established dairy sectors.

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GrazyDaiSy researched the use of semi-natural to natural pastures and the results demonstrated a great potential contribution of the forage on semi-natural to natural pastures to forage (protein) supply to grazing lactating cows on organic dairy farms in Europe. In Estonia, e.g., the share of grass in the diets of lactating cows was estimated to be up to 76.7% of the DM consumed during the grazing season. This depends of course on available pasture area and the extent of its use, and there is a great diversity of organic dairy farms differing in farm size and structure, agro-ecological conditions, and pasture, herd, and grazing management strategies. Timing, farmer strategies and environmental and other conditions influence the outcome. Timely adjustment of the onset and frequency of grazing, of the stocking densities on pastures, as well as of the amount and timing of supplement feeding appear to be valuable options for an improved pasture use, whereas the rotation scheme, the duration of daily pasture access, and the type of supplement feed appeared to be of less importance. Observed climate change related

issues such as extreme heat and dry weather, called for urgency and the project team focused particularly on strategies addressing these issues.

GrazyDaiSy had a strong focus on rearing calves with the dam for an extended period after calving, compared to the practice in most organic dairy farms. One particular focus was male calves, which should be transferred to a fattening farm. Trials showed that keeping calves until 4 weeks of age with the dam at the dairy farm led to improved weights and immune competence at arrival at the fattening farm. Although dam-rearing weight and immune system advantages did not seem to translate to better health at the fattening farm, these calves benefitted from a reduced prevalence of treatments with medicines. Providing hides on pasture to dairy cows show that cows calving for the first time move further away from herd members at calving, and seemed to prefer to isolate themselves more through distance. Results suggested that hides facilitated maternal bonding. Furthermore, it seemed that dams showed more affiliative behaviour to their calves when having full-time cow-calf contact (CCC), rather than part-time contact, later than 48hrs after calving, and that the bond between cow and calf became stronger when the calf suckled the cow, compared to contact without suckling. Environmental and economic dimensions of sustainability of CCC systems were analysed using models based on data, lining up different scenarios with CCC, and concluding that the higher amount of milk drunk by the calves in these systems, influenced the environmental impact of these systems. However, it also called for a broader focus on systems changes and inclusion of other factors such as animal welfare and biodiversity, and a more combined view on dairy herds as milk and meat producing.

In GrazyDaiSy, animal health and welfare promoting strategies were researched through observational case studies, and repeatedly demonstrated the importance of context to analyse problems and find solutions, which allowed for co-learning across countries, until activities were partly interrupted due to Covid-19. The difference in management antibiotics was very big, within the frame of EU organic legislation. A strong focus was on calf and heifer health in innovative dairy systems with nurse cows, based on grazing. Cryptosporidiosis was identified problem, but seemed to be less serious than traditionally reared calves, especially in the mixed grazing systems, where resistant (nurse cows) and susceptible calves grazed together, and they also seemed to avoid problems with intestinal parasites, and were immunised at the second grazing season when they had spent their summer as young calves on grass.



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