

Grazing practices in three European countries: results of a survey in dairy farms

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Abstract

Grassland plays an important role in mitigation of greenhouse gas (GHG) emissions from the agricultural sector by sinking carbon (Soussana *et al.*, 2010). Thus, grazing is often essential for maintenance of grassland. Furthermore, grazing has demonstrated positive effects on animal welfare, production costs, landscape and biodiversity. However, grazing is decreasing in most European countries. For the project Life Dairyclim, a survey was undertaken in the three partner countries for a better understanding of grazing practices and of perceptions and expectations of dairy farmers. A questionnaire was distributed to dairy farms of south Belgium (BE), Luxembourg (LU) and Denmark (DK). Of 1439 responses, 1147 declared that lactating cows grazed (80%) but this result reflects different situations; 95% lactating cows were grazing in BE while this percentage dropped to 83% in LU and 37% in DK. This lower percentage of lactating cows seemed to be linked to larger farm surface, bigger herd size and increased milk yield. The opinion about benefits of grazing depended on the grazing practices. Grazing farmers were convinced of the beneficial effects of grazing on animal welfare (95.4%) and on landscape preservation (86.1%). Surprisingly, the positive effect on environment was mentioned in only 61.3% forms and even a negative impact was cited in 16.6%. Eighty six percent of surveyed farmers expected to continue grazing.

Keywords: grazing, grassland, grazing practices, environmental impact, climate change, mitigation

Introduction

Agriculture is considered to be responsible for 12% of the global production of greenhouse gases (GHG) (Tubiello *et al.*, 2014). The potential of grassland to store carbon provides an opportunity for the sector to mitigate GHG emissions (Soussana *et al.*, 2010) and grazing livestock may help in maintaining these ecosystems. Yet, grazing is decreasing in most European countries, probably because of the development of intensive farming systems and of automation. Furthermore, the mitigation potential of grassland is influenced by the type of grassland and its management (Gerber *et al.*, 2013). One of the objectives of the European project, Life Dairyclim is to highlight the importance of grasslands in dairy farming as potential carbon sink and to improve grazing practices. We surveyed the dairy sector of the three participating countries to get an overview of grazing practices and to assess the perceptions and expectations of the farmers about grazing. By analyzing the responses, we aimed to understand the reasons for the decrease of grazing and determine levers of action to encourage it.

Material and methods

The questionnaire was written with the three partners in Luxembourg (LU), south Belgium (BE) and Denmark (DK), and consisted of 18 questions about the overall description of the dairy farm, its grazing practices and perceptions and expectations of farmers. The questionnaire was circulated by mail, during conferences and on the project website. The survey lasted from December 2015 to March 2016. A global analysis was performed on the compiled data and then differences between countries were highlighted. The statistical software SAS (SAS Institute, 2002) was used for descriptive procedures and analysis of the categorical variables. Chi-square test and Fisher- test were used to test equality of proportions.

Results and discussion

Of a total of 6132 forms distributed to dairy farms in the three countries, 1464 were completed, indicating a response rate of 23.9%. The most represented system was the conventional one (1287 responses – 89%), while 136 organic farms were recorded (9.6%). Belgium and Denmark reached 9.2% and 11%, respectively. In Luxembourg, only three farms were included in the organic system (3%) but two other farms did not answer the question. Thirty nine percent of farms specialised in milk production. Belgian farms had more diversified activities (28% milk, meat and crops $P < 0.05$). The size of Danish farms was larger than those from BE and LU in terms of ha and the number of cows (Figures 1, 2).

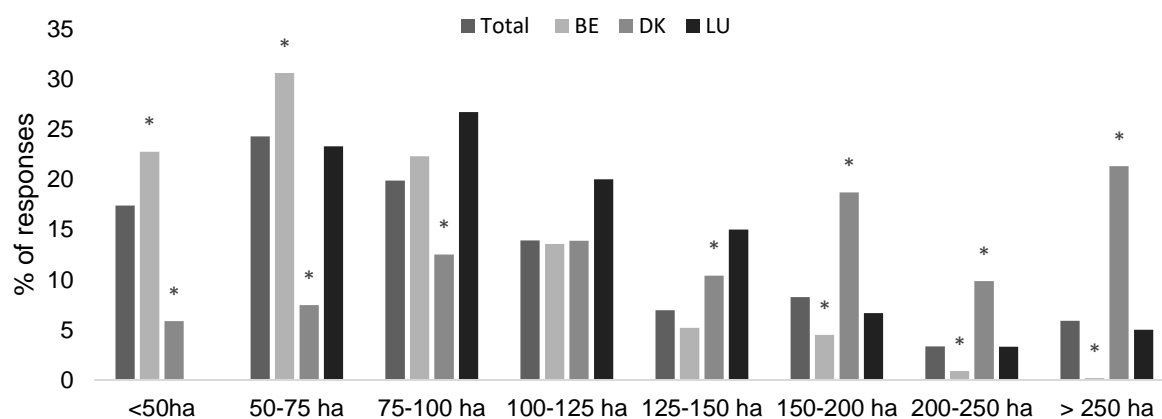


Figure 1. Surfaces of the dairy farms from each country and comparison with the compiled dataset. Statistical differences ($P < 0.05$) are identified by “*”. BE: Belgium. DK: Denmark. LU: Luxembourg.

The level of milk production was also higher with nearly 50% of DK farms declaring an annual milk yield averaging 10 - 12,000 kg while only 2% BE and 4% LU reached that level. Eighty percent of farmers declared lactating cows grazing with contrasted situations: 95% lactating cows were grazing in BE while this percentage dropped to 83% in LU and 37% in DK. A set of questions addressed no-grazing farmers. In DK, the most frequently cited reasons for stopping were economic reasons (55% of responses), reduction in milk yield (MY) and difficult grazing management for 48%. DK farms clearly related grazing to a possible decrease in MY and consequently, a fall in income. The opinion about benefits of grazing depended on the grazing practices. Danish farmers were the most critical; for example, merely 47% of them considered that grazing lowered production costs while 73% in LU and 78% in BE agreed with this. Landscape preservation was cited as a benefit of grazing for 87% of DK farms.

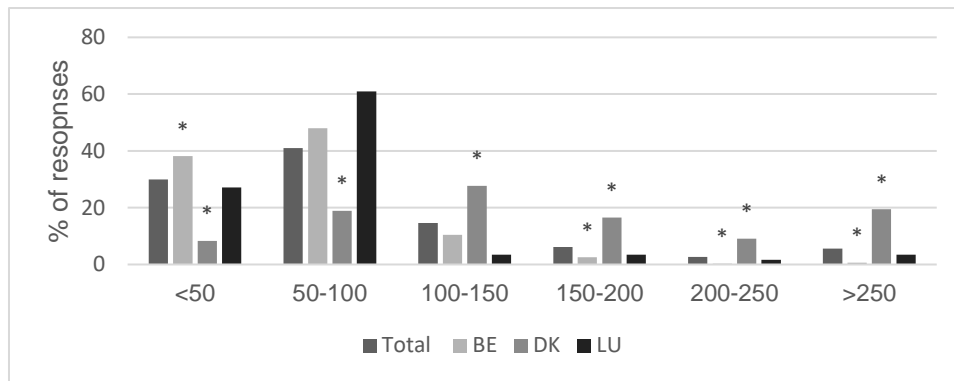


Figure 2. Number of dairy cows per farm from each country and comparison with the compiled dataset. Statistical differences ($P < 0.05$) are identified by “*”. BE: Belgium. DK : Denmark. LU: Luxembourg.

Farmers with grazing systems were very convinced about the beneficial effects of grazing on animal welfare (95.4%) and on landscape preservation (86.1%). Surprisingly, grazing was considered positive toward environment by only 61.3% and considered to have a negative environmental effect by 16.6%. This latter high percentage is due to the Danish farmers who estimated that grazing had a negative impact (42.2%). Eighty-six percent of surveyed farmers expected to continue with grazing systems.

Conclusion

Analysis of survey’s results demonstrated that a decline in grazing is mainly observed in intensive dairy farms. Reasons provided for stopping, which mainly related to economic and difficult management, confirm this hypothesis. As already demonstrated by Kristensen *et al.* (2010); opinions about grazing depend on grazing practices. Grazing is negatively perceived by farmers without grazing systems. Nevertheless, through its potential for carbon storage, preservation of grassland contributes to the mitigation of GHG emissions of the agricultural sector. Educational effort is necessary to raise the awareness among farmers about the environmental impact of grazing and to highlight their role in mitigation of GHG emissions. This is crucial for their involvement in EU greening policies.

Acknowledgement

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