

23. Grass-clover systems: key on Dutch dairy farms after derogation abolishment?

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Establishing grass-clover swards might be an interesting strategy towards more sustainable dairy production in the Netherlands. Also, grass-clover swards may allow to deal better with the uncertainty imposed by policy changes and fluctuating feed and mineral fertilizer prices. A recent policy change is the planned abolition of derogation. Derogation allowed Dutch dairy farmers to go beyond the 170 kg N ha⁻¹ of animal manure under specific conditions. The aim was to quantify and evaluate the environmental and economic implications of implementing grass-white clover swards and a grass-red + white clover ley on a representative Dutch dairy farm on a sandy soil in a post-derogation era. We used a whole-farm dairy model based on linear programming that optimizes labour income. This model was combined with a life cycle assessment and nutrient balance. The impact on environmental (e.g. nitrogen surplus), economic (e.g. labour income) and farm configuration (e.g. diet composition) were assessed. Three different scenarios on a dairy farm without derogation but with grassland and arable land for maize were evaluated. Hereby the grassland was 100% used for perennial ryegrass in the reference scenario, 100% used for perennial ryegrass-white clover in the second scenario, and a perennial ryegrass-red + white clover ley in rotation with forage maize in combination with perennial ryegrass for grassland that was not part of the rotation in the third scenario. Preliminary results show that the use of clover swards could be an economically viable strategy and can reduce the nitrogen surplus of a dairy farm.

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