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The XX International Grassland Congress took place in Ireland and the UK in June-July 2005.

The main congress took place in Dublin from 26 June to 1 July and was followed by post congress satellite workshops in Aberystwyth, Belfast, Cork, Glasgow and Oxford. The meeting was hosted by the Irish Grassland Association and the British Grassland Society.

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Green Dairy, a project for environmental friendly and sustainable dairy systems in the Atlantic area

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Introduction Green Dairy is an European Interreg III B project which runs over 3 years. It brings together 10 research and development partners from 5 countries and 11 regions of the Atlantic Area which range from Scotland to Portugal. It aims to provide a better understanding of the impact of intensive dairy systems on the quality of the environment in order to develop ways of improving practices in the different regions. This is expected to encourage more rapid responses to the problems of deteriorating water and air quality and a more appropriate response within or between regional contexts that could be used as proposals for implementation of regulations or advice.

Materials and methods Well motivated farmers have been selected to build a network of pilot dairy farms which aims to test different ways of optimising practices to reduce nutrient losses from the farming systems. The systems studied cover a wide range of levels of intensification whether expressed on a per cow, per hectare or even per worker basis. The changes expected will also have to integrate the local geographical and economic context of each region in which they are situated. Thus, dairy farm systems can be based on the maximum use of grazing on the one hand or on maize silage only with high quantity of slurry to spread on the other. This project aims to develop discussions on the diverse ways of optimising each farming system according to the local environment and regulations. At the same time, a network of research stations has been established in which mineral nutrient flows are monitored on complete dairy systems in order to make possible the identification of the critical points for each specific problem and also to measure the effectiveness of various options to, for example, protect water resources. Mathematical modelling will be used to describe nutrient flows and losses at the entire farm system. These results will then be used to provide options for the farmers to increase their nutrient use efficiency and to have a better understanding of the controls over water quality that are observed in the Atlantic area by undertaking modelling and mapping studies. A final seminar is planned in September 2006 at which the final results of this study (which involve 5 countries and 10 partners: 1) United Kingdom, ARINI, N. Ireland; IGER, Devon and Wales; SAC, Scotland: 2) Ireland, TEAGASC, Moorepark, SW Ireland: 3) France, Institut de l'Élevage, CRAB Brittany, CA44 Pays de la Loire and Aquitaine: 4) Spain, CIAM, Galicia; Neiker, Basque Country: and 5) Portugal, UTAD, North Portugal) will be presented. Further details of the project are given at the Green Dairy (2005) website.

Results The preliminary results are on the characterisation and on the initial environmental assessment and diagnosis of the farming systems. Mineral balances at the farm gate scale calculated for the commercial pilot farms shows that the excess of nitrogen (N) varied from 100 to 500 kg N/ha of the agricultural area, from 13 to 29 kg N/1000 l of milk sold and the efficiency of N utilisation rate from 29 to 38%. Nitrate concentration in drainage water varied from 10 to 50 mg NO₃/l: at present a direct link to the contributions of the various dairy farming activities in the total land use of the regions and of natural conditions (annual rainfall, winter drainage, denitrification etc.) has not been determined. At the experimental sites, mineral flows within the farming systems have been determined during 2004 and relationships with N soil contents measured before the oncoming drainage period. Estimation of nitrate losses by measurement of nitrate concentration in drainage water or by modelling will provide a means of determining the proportion of the excess of the farm gate balance that is expected to be lost for each system under the various conditions of the Atlantic region.

Conclusions The present study will provide practical information on opportunities to increase the efficiency of nutrient use and reduce pollution throughout the wide ranging conditions of the Atlantic region. As well as determining new scientific information, the nature of the programme means that there are direct interactions between farmers and scientists to enable knowledge to be effectively and directly transferred from research to farm and *vice versa*.

References

Green Dairy (2005). www.inst-elevage.asso.fr/greendairy/