

Abstract by Charlotte Paillette - A model of soil nitrogen reserves in an Irish grass sward

Grazed grass is by far the cheapest feed source for dairy cows in Ireland, but grass growth is highly variable within and between years. Furthermore, producers have no control over many of the factors affecting grass growth, particularly climatic factors. Factors which producers can influence include soil reserves of nutrients, such as nitrogen (N). Soil models can be used as management tools to indicate the soil N reserves as influenced by environmental factors and sward management. Developing a model to predict soil N reserves will allow farmers to better manage their sward and their N fertilization plan. The model takes into account the factors influencing the daily evolution of N in an Irish soil, and is calibrated using Teagasc data. It is a dynamic model developed in the programming language C. Nitrogen is considered in two separate reserves, organic and mineral; and the flows of N between the reserves are described. This model is intended to be used by farmers, therefore it needs to be as easy to parameterise in order to allow farmers to run several simulations of management within an acceptable time frame.