The effect of perennial ryegrass ploidy and white clover inclusion on milk production of dairy cows

Brid McClearn1,2, Trevor Gilliland2,3, Clare Guy1,2, Michael Dineen1, Fergal Coughlan1 and Brian McCarthy1

1Teagasc, Animal and Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork, Ireland; 2Institute of Global Food Security, Queen’s University Belfast, Belfast, N. Ireland; 3Agri-food and Biosciences Institute, Large Park, Hillsborough, BT26 6DR, N. Ireland.

Abstract

Grazed grass is considered the cheapest feed available for dairy cows in temperate regions and so to maximize profits, dairy farmers must utilize this high quality feed where possible. Recent research has reported that including white clover (Trifolium repens L.) in grass swards can have a positive effect on milk production. The aim of this study was to quantify the effect of tetraploid and diploid perennial ryegrass (Lolium perenne L.; PRG) swards sown with and without white clover on the milk production of grazing dairy cows.

Four grazing treatments were used for this study; tetraploid-only PRG swards, diploid-only PRG swards, tetraploid PRG with white clover swards and diploid PRG with white clover swards. Thirty cows were assigned to each treatment and swards were rotationally grazed at a stocking rate of 2.75 cows/ha and a nitrogen fertilizer application rate of 250 kg/ha annually. There was no significant effect of ploidy on milk production. Over this 4 year study, cows grazing the PRG-white clover treatments had greater milk yields (+ 597 kg/cow.year) and milk solids yield (+ 48 kg/cow.year) compared with cows grazing the PRG-only treatments. This significant increase in milk production suggests the inclusion of white clover in grazing systems can be effectively used to increase milk production of grazing dairy cows.