

Grass-Birdsfoot Trefoil Mixtures to Improve Pasture-Based Dairy Performance

M. Rose, B. Waldron, E. Creech, C. Isom, M. Peel

Abstract

With an increasing number of organic pasture-based dairies, reduced dry matter intake from grazing often becomes one of the major limiting factors in milk production, and nutrient rich pastures may result in lower pregnancy rates.

It is hypothesized that greater grass energy concentrations will act synergistically with low levels of condensed tannins in birdsfoot trefoil to improve dairy heifer performance on pasture settings.

In 2016 and 2017, dairy heifers were grazed and moved every seven days on eight different pasture treatments that were divided into five 0.2 acre paddocks. Forage sampling took place before and after each weekly move. Animal weight measurements were taken before grazing began and after every 35 day grazing cycle. Grasses included meadow brome (MB), high sugar orchard grass (OG), high sugar perennial ryegrass (PR), and tall fescue (TF), with four additional treatments also being mixed with birdsfoot trefoil (BFT) and the aforementioned grasses. Average Daily Gains (ADG) were in order from highest to lowest as follows: PR+BFT (1.62), OG+BFT (1.52 lb. /day) \geq MB+BFT (1.49), TF+BFT (1.41), OG (1.36 lb. /day) \geq PR (1.29 lb. /day) \geq MB (1.20 lb. /day) \geq TF (0.97 lb. /day).

Preliminary results appear to show that the grass-birdsfoot trefoil mixtures exhibited higher crude protein levels (~13-19%) over their respective monocultures (~9-12%) and that water soluble carbohydrate levels did not necessarily coincide with ADG. However, dietary energy values did coincide closely with ADG data. This study will also be conducted in 2018 to further validate the current results.