

Effect of *In Vitro* Fibre Digestibility of Whole Plant Barley Silage on Milk Production and Feed Efficiency

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Alberta dairy producers have provided anecdotal evidence to barley breeders at the Field Crop Development Centre (FCDC) indicating a difference in milk production when lactating cows are switched between diets containing Falcon or Tyto whole plant barley silage (WPBS). A recent multi-year project showed that the mean *in vitro* fibre digestibility (IVFD) of WPBS is approximately 50% regardless of type (2 vs. 6 rows; hulled vs. hullless), but there was a wide range in IVFD between and within cultivar. The objective of this study was to evaluate the effects of WPBS IVFD on milk production and feed efficiency.

Eight multiparous cows were assigned to each of two dietary treatments. The treatments were based on the inclusion of Falcon or Tyto (6-row, semi dwarf, hullless) WPBS. The IVFD of the Falcon and Tyto WPBS was 61.6% and 57.2%, respectively. In order to formulate diets that were iso-nitrogenous and equal in neutral detergent fibre (NDF) content, the Falcon-based TMR contained more WPBS (65.6% versus 60.0% of DM), less steam rolled barley (9.4% versus 12.9% of DM) and less canola meal (4.6% versus 6.7% of DM) than the Tyto-based diet. The CP, NDF and starch content of the Falcon and the Tyto TMR were 17.5% and 17.3%, 35.2% and 35.0%, 22.1% and 25.1% DM, respectively. There was no difference ($P > 0.05$) between treatment in DMI (28.2 and 29.2 kg/d), milk yield (38.5 and 38.1 kg/d), milk composition or milk component yield. However, cows consuming the Falcon-based TMR utilized feed more efficiently (1.44 kg milk / kg DMI) than did cows consuming the Tyto-based TMR (1.32 kg milk / kg DMI).

Implications: There is a difference in *in vitro* fibre digestibility (IVFD) among barley varieties, and *in vitro* fibre digestibility (IVFD) of whole plant barley silage (WPBS) is an important consideration when balancing diets for high-producing lactating cattle.