LUPIN OR BARLEY GRAINS AS SUPPLEMENTS FOR COWS FED CEREAL HAY IN EARLY LACTATION

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In the seasonally calving areas of South Australia, cows often calve before pasture feed is available. During this period of early lactation cows are fed cereal grains and hay. Grain legumes are an alternative to cereal grains for feeding during this period but differences in the composition of the two grain types may result in differences in their nutritive value for milk production. This experiment measured the milk production of dairy cows when lupin or barley grains were fed in a hay-based ration.

Forty eight Friesian cows were fed 5 kg dry matter/cow/day of either rolled barley, a 1:1 mixture of rolled barley and rolled lupins or rolled lupins for the first 12 weeks of lactation. All cows were fed 2.5 kg dry matter/cow/day of rolled barley during weeks 13-24 of lactation and no grain during weeks 25-36 of lactation. Barley hay was available ad libitum throughout the lactation. Milk yields were recorded on three consecutive days each week and the cumulative milk samples analysed for fat and protein content. Cows were weighed each week.

Hay intakes during the first 12 weeks of lactation were 11.9, 14.8 and 14.6 kg dry matter/cow/day for cows fed barley, barley/lupins and lupins respectively. Milk yield and liveweight data for the first 12 weeks of lactation are given in Fig. 1. No differences (P < 0.05) between treatments were recorded for these parameters during weeks 13-24 and 25-36 of lactation. The mean fat and protein contents of the milks were similar for all treatments during each 12 week period.

The use of lupins (31.0% crude protein) instead of barley (10.9% crude protein) increased the total crude protein content of the ration from 9.2% to 14.2%. The higher intake of hay and the improved milk production of cows fed lupins is at least partly due to the increased protein intake. When cows are fed cereal hay in early lactation lupin grain is a more suitable supplement than barley grain for milk production.

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