

Effect of feeding milked Merino sheep with different protein/energy levels on milk yield and milk composition

S u m m a r y

The aim of the study was to determine the effect of different dietary levels of protein and energy in the winter feeding of Merino ewes milked from 50 to 108 (+/-7) days of lactation, on the quantity and quality of milk produced and its suitability for cheese making. Ewes were assigned to three groups: I – control, fed according to INRA-88 standards for milked sheep, II – fed a diet with a 11.8% lower protein to energy ratio (PDI/UFL), III – fed a diet with a 10.7% higher protein to energy ratio in relation to the control group. Twenty-two ewes were assigned to each group. The feeding level for group I was formulated for a sheep weighing 60 kg and producing 0.6 kg milk/day. The experimental diets were composed of: silage (maize, beet leaf), lucerne hay and concentrate mixture. The body weight and condition of the ewes were determined at the start and at the end of the study, and milk composition and yield at 14-day intervals. Four times at two-week intervals, two types of cheese (curd and maturing semi-hard) were made from the milk. The composition and quality of cheeses were analysed, and the retention of milk components in cheese was determined. The milk processed for cheese was analysed for the level of casein, albumins, globulins and urea. No marked differences were found between the groups in the body weight and the condition of ewes. Production of milk and content of milk components in group III was 23% higher than in group I and 36% higher than in group II. In group I, it was 10% higher than in group II. The milk did not differ in the content of protein fractions, while urea level was much lower in group II (6.79 mmol/l) than in groups I (10.33 mmol/l) and III (11.23 mmol/l). No differences were found between the groups in the composition and quality of produced cheeses.