DEVELOPMENT OF DLS BRED OF SHEEP: GENETIC AND PHENOTYPIC PARAMETERS OF DATE OF LAMING AND LITTER SIZE

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Least square means, heritabilities, repeatabilities, genetic and phenotypic correlations of date of lambing and litter size in a population of DLS sheep selected for extended breeding season were estimated by different methods. Mean date of lambing for first, second and third parities was 20 Jan., 6 Jan., 31 Dec. and mean litter size was 1.20, 1.25 and 1.41 lambs, respectively. Heritabilities for date of lambing were 0.37 (sire component), 0.25 (sire and dam component), 0.52 (correlation between full sisters) and 0.17 (regression of daughter on dam). For litter size these methods gave the following estimates: 0.17, 0.14, 0.22 and 0.04, respectively. Repeatability estimates averaged 0.21 for date of lambing and 0.24 for litter size. Genetic correlation between the two traits was calculated at −0.38 (sire component), −0.25 (full sisters) and −0.07 (regression of daughter on dam) while the phenotypic correlation was estimated at −0.19 (P<0.01).

Key words: DLS sheep, heritability, repeatability, genetic correlation, phenotypic correlation, date of lambing, litter size

The breeding season in traditional British breeds of sheep in Canada is relatively short extending from Sept. to Dec. and seldom later than Jan. (Dufour 1974). Such a limitation, resulting in seasonality of production, is a serious constraint to the development of a viable sheep industry. Consequently, there has been considerable interest in developing a new breed of sheep with an extended breeding season, which enables breeders to control the seasonality of lamb production.