

## Performance of ewes selected to have four functional teats

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**Introduction** Ewes with extra teats can be found in many breeds but the amount of milk produced from these is only occasionally substantial. The aim of the breeding project was to investigate the possibility of developing a ewe with four functional teats.

**Material and methods** A group of 15 ewes and four rams, all with four teats, together with five two-teated Cambridge ewes formed the initial nucleus group. Subsequently five four-teated Cambridge rams were used. The following measurements were recorded: (a) number of teats, (b) length of front (FL) and rear (RL) teats measured at 5 months of age, (c) distance between the front teat (FT) and front perimeter line of the fore udder (FU) measured *post partum*, (d) milk production from front (FM) and rear (RM) teats recorded over a 3h period at 2 to 4 days *post partum* using oxytocin to ensure complete let down. Rams and ewes were selected on front teat development with a qualifying FL:RL ratio of 0.7 with little emphasis on their dam's front teat milk production.

**Results** A total of 595 lambs were born in the period 1989-96 and of these 1, 9, 571, 10 and 4 had respectively 2, 3, 4, 5 and 6 teats. The FL:RL ratio remained near constant from 1990 onwards. Males had smaller teats than females and also a more variable and significantly lower FL:RL ratio until 1996 (Table 1). In the selected group of ewes the FL:RL ratio was above the population mean and considerably less variable. Even so the proportion of total milk yield produced from the front teats varied widely (Table 2). In each year values from 0.3 to 0.001 were recorded with the increase in performance over time mainly a reflection of a reduction in numbers of ewes in the latter category. The correlations between the FL:RL and FM:TM ratios were significant ( $P<0.05$ ) in the ewes born in 1992 to 1994 but not in those produced in 1995 and 1996. The correlations between FT-FU distance and milk production ratios were however consistently significant ( $P<0.05$ ) over this latter period.

**Table 1** Front and rear teat length ratios

	MALES			FEMALES			s.e.d.	Significance of MvF difference
	No.	F:R	CV%	No.	F:R	CV%		
1989	11	0.38	21.5	15	0.60	19.6	0.042	***
1990	18	0.62	21.1	23	0.81	14.3	0.039	***
1991	19	0.62	23.8	34	0.79	16.9	0.045	***
1992	46	0.66	22.0	51	0.78	11.2	0.024	***
1993	48	0.71	22.5	50	0.79	17.0	0.030	**
1994	58	0.60	33.2	58	0.71	28.1	0.037	**
1995	58	0.66	25.3	69	0.78	14.7	0.026	***
1996	39	0.73	12.8	36	0.75	17.1	0.026	

**Table 2** Milk production of selected ewes

	1992	1993	1994	1995	1996
Number	24	34	29	47	12
FL:RL ratio	0.81	0.84	0.80	0.81	0.81
CV%	8.3	9.8	5.9	8.5	6.4
FM:TM ratio	0.106	0.071	0.084	0.104	0.109
CV%	82.0	79.3	82.1	66.9	54.5
Correlation <i>r</i> values					
FM:TM and FL:RL	0.45*	0.39*	0.48**	0.23	0.25
FM:TM and FT-FU			0.64**	0.47**	0.55*

**Conclusions** It has been possible to create and maintain a true breeding four-teat flock. Although almost all ewes have functional front teats, the amount of milk produced from them continues to be very variable and so offers selection opportunities. Fore udder development appears to be an important feature of front teat yield.