

THE EFFECTS OF LIVE WEIGHT AND AGE ON FERTILITY AND FECUNDITY
IN CASHMERE GOATS AFTER INSEMINATION WITH FROZEN-THAWED SEMEN

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The reproductive performance of Angora goats is related to their live weight and age (Shelton 1978). A similar relationship appears to exist in the Australian feral (cashmere) goat (Restall 1987).

We examined the effects of live weight (lwt) and age on fertility and fecundity of cashmere does after insemination with frozen-thawed semen. Control of oestrus and fertility to artificial insemination (AI) are detailed elsewhere (Ritar et al. 1987). Briefly, does were injected with 200 I.U. PMSG (Folligon, Intervet Australia) at removal of either progestagen sponges (Intervet Australia) or CIDRs (AHI N.Z.). All maiden and half the mature females were laparoscopically inseminated into the uterus, and the remaining mature does were cervically inseminated. Does were weighed after AI. Pregnancy and litter size (no. foetuses/pregnant doe) were determined by ultrasonic scanning 72-78 days after AI. Results are presented in Table 1.

Table 1 Effect of live weight on fertility and fecundity

AI method	Class of live weight (kg)				
	≤ 26	27-29	30-32	33-35	≥ 36
% does pregnant (no. inseminated)					
Cerv.	19.2(52)	39.4(71)	43.2(111)	41.9(86)	42.3(78)
Lap. - Mature	67.2(61)	63.2(57)	64.6(99)	63.0(73)	64.2(67)
- Maiden	54.3(81)	64.7(51)	70.7(41)	81.8(22)	75.0(8)
% pregnant does with ≥ 2 (≥ 3) foetuses					
Cerv.	70.0(0.0)	64.3(7.1)	53.3(6.3)	80.6(27.8)	66.7(21.2)
Lap. - Mature	58.5(4.9)	66.7(11.1)	51.6(12.5)	71.7(26.1)	83.9(29.0)
- Maiden	40.9(4.5)	60.1(9.1)	62.1(10.3)	77.8(5.6)	83.3(33.3)
Overall	60.0(4.2)	63.9(9.2)	56.0(9.9)	76.0(23.0)	74.1(27.7)

The mean \pm s.e. lwts for mature and maiden does were 31.59 ± 0.17 kg and 27.94 ± 0.29 kg. Of 959 does for which lwts were recorded, 514 were pregnant (53.6%). Fertility of mature does declined markedly at or below 26 kg after cervical AI ($t = 3.120$, $P < 0.01$), but there was no effect of lwt on pregnancy rate in either mature or maiden does after laparoscopic AI. The number of pregnant does with 1, 2, 3 and 4 foetuses was 180 (35.0%), 264 (51.4%), 62 (12.1%) and 8 (1.6%). For the five increasing weight classes, overall litter sizes were 1.66, 1.73, 1.66, 2.02 and 2.02 ($P < 0.001$). There were significantly fewer pregnant maiden than mature does with ≥ 3 foetuses ($X^2 = 3.934$, $P < 0.05$).

The fertility to cervical (but not to laparoscopic) AI was related to lwt, whilst fecundity appeared to be influenced by both age and lwt.

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