

VARIATION IN DENSITY OF SKIN FOLLICLES IN THE FERAL GOAT

B.J. RESTALL*, W.A. PATTIE# and D. WINTER*

Despite interest in the selection of animals for cashmere production little is known of the variation in skin follicle populations in the Australian feral goat. Skin biopsies were taken from the midside of 15 mature, unselected female feral goats at 5 to 6 week intervals between October 1981 and October 1982, and the density of skin follicles measured after histological processing. Mean live weights and densities of secondary follicles for each sampling time are shown in Fig. 1.

Secondary follicle densities varied from 11.5 to 13.0 per sq mm, with significant variation between animals ($P < 0.01$). Differences between sampling times did not reach statistical significance. There was considerable covariance between live weight and secondary follicle density over time (correlation between means, -0.53). This indicates that seasonal environmental effects which cause increases in live weight also cause decreases in density of secondary follicles. This may simply be an effect of skin expansion.

The covariance between live weight and density between animals within sampling times was also negative but much smaller (correlation -0.23). This shows that larger animals tend to have a lower density of secondary follicles when the animals are measured at the same time. The relationship is not very strong but this may be a result of the reduced range in live weight at each sampling time. This relationship will include genetic as well as environmental sources of covariance, but it is not possible to partition them from these data.

In spite of the difficulties in the concurrent sampling of large flocks and the subsequent processing problems, animals to be compared should be sampled at the same time to reduce environmental variation in the density of secondary follicles.

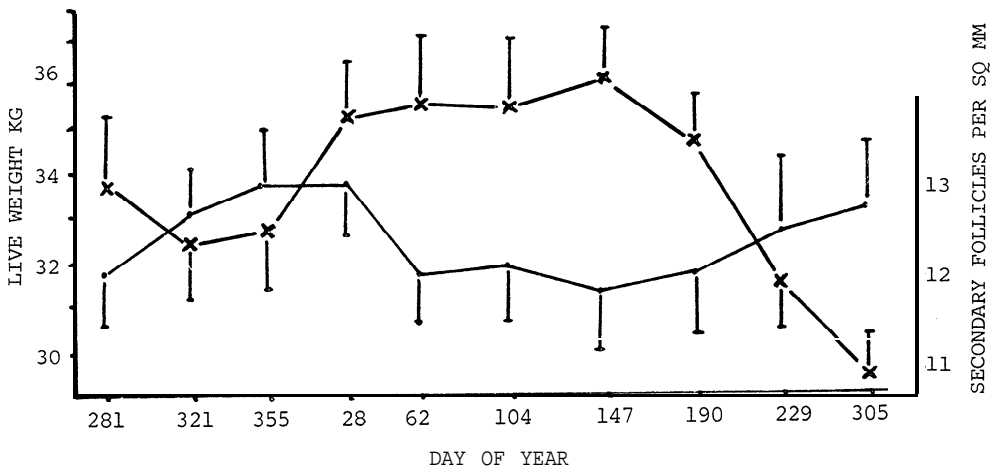


Fig. 1 Changes in live weight (x—x) and density of secondary follicles (.—.) in the skin of feral goats at various times of the year. Points are means of 15 animals with S.E.'s

* N.S.W. Dept of Agriculture, Agricultural Research Centre, Wollongbar, N.S.W. 2480.

Dept of Animal Production, University of Queensland, St. Lucia, Qld. 4067.