

DEVELOPMENT OF A MEAT-GOAT FOR SOUTHERN AUSTRALIA:

PRELIMINARY INVESTIGATIONS

T.W. Hancock¹, D. Phillips² and J.R. Sabine¹

¹Waite Agricultural Research Institute, University of Adelaide,
Glen Osmond, South Australia, 5064.

²Struan Research Centre, Naracoorte, South Australia, 5271.

This project was initiated as a result of a request from a grazier, who was interested in investigating the meat-producing potential of goats under improved grazing conditions. Goat meat is regularly consumed in many overseas countries but it has not been important as a major source of animal protein in Australia.

A program for the development of a meat goat differs in several aspects from that facing the breeder in the established animal industries. This is illustrated by the following points:-

- a) we are dealing with a program in its infancy (i.e. there is no existing meat strain readily available in Australia).
- b) there is no established stud hierarchy nor existing concepts as to what constitutes the "ideal" animal.
- c) the logical starting population (ferals) has not been recently exposed to artificial selection.
- d) as many ferals are slaughtered at local abattoirs there exists the potential to select intensely amongst the yarded animals for the desired type of goat.
- e) as the main market potential would appear to be for a young animal slaughtered at or soon after weaning (15-20 kg dressed weight) our initial objective appears somewhat simpler than that for sheep, cattle and pig where a larger range of marketable weights is desired.

During 1978 a herd of 90 feral does was mated with five bucks to provide initial information. These does were previously selected on the basis of large body weight and no obvious reproductive faults. Results of the subsequent analysis was most encouraging. For example,

- a) the mean growth rate was quite high: 0.18 kg/day for male kids and 0.16 kg/day for female kids;
- b) reproduction rate was high (kidding percentage of 159%);
- c) heritability estimates (calculated by half-sib analysis) for body weight, height, length, girth and growth-rate were reasonably large (i.e. 0.58 ± 0.50 , 0.43 ± 0.39 , 0.86 ± 0.63 , 0.38 ± 0.38 and 0.52 ± 0.46 respectively);
- d) a limited number of dressed carcasses were well-received by members of the community including a professional cooking demonstrator and a local restaurant owner.

Clearly five bucks and ninety does falls far short of the optimum population size and structure for a long-term breeding program, but this was determined by the resources the grazier could devote to the project. If the market prospects for a meat goat continue to prove favourable and if more graziers continue to show interest in the program, it seems logical to continue to increase the size of the base herd by selecting further feral bucks and does, preferably from several different areas of Southern Australia. Studies of feral population differentiation have begun to assess the merit of this possibility. Simultaneously, selection of kids on the basis of body weight at optimum turn-off date (or growth rate) is being carried out. In subsequent generations, this may be modified to include measurements related to body composition, conformation, etc. using a selection index. Also, as high fertility and fecundity are desirable, all infertile does have been culled and mainly twin born kids retained.

All characters exhibit a substantial common environment component, but the high proportion of twins allows this to be estimated. This probably reflects maternal effects which is not unexpected in measurements made up to weaning. As the desired market weight is reached at weaning or soon after, it is not clear whether the selection strategy for improving doe performance should include more than simply the growth of offspring. For example, if milk production of the doe were shown to be the main factor responsible for this maternal effect, it might be more efficient to select does directly for milk production.

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THE EFFECT OF CORRECTION FACTORS ON FECUNDITY IN BREEDING PROGRAMS WITH SHEEP

L.P. Jones

Animal Research Institute, Werribee, Vic, 3030

Lambs born and reared as twins have lower liveweights and fleece weights than singles, at ages up to 1½ years. The handicaps against twins are given by Turner and Young (1969).