

PROGRESS THROUGH SELECTION AGAINST THE ABORTING ANGORA GOAT

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Several investigations into the problem of habitual abortion in Angora goats have been undertaken (van Heerden, 1963, van Rensburg, 1965, 1970). Although these contributed to the knowledge of physiological aspects of abortion, the origin and the genetic basis remain obscure. Van Heerden (1964), however, made certain long term managerial recommendations to reduce the incidence of abortion with which a certain degree of success has been achieved. The object of the present study was to assess the value of elimination of aborter Angora goat does on the farm using breeding records.

The data were obtained from the records of stud breeders over a period of nine years. The number of times kidded, number of kids born alive or still-born and abortions of 105 aborters and 108 "normal" does and their progeny were compared. Normal does were those which had never aborted, while aborters were those which had aborted at least once before culling. The latter were identified by visual inspection of the does for exterior signs of abortion twice weekly. All the goats were kept under extensive semi-arid range conditions. The reproductive per-

formance of normal and aborter does and their progeny is summarised in Table 1.

No significant differences occurred in the number of does which kidded following observed mating or the number of kids born per doe when abortion were taken as kids born. Nor were significant differences in fertility and fecundity found between the F₁ progeny of normal and aborter does. Moreover, 33% of the F₁ progeny of aborters aborted cf. 35% of the progeny of normal does. It is therefore concluded that under these managerial conditions very little genetic progress can be made by eliminating aborters.

The hypothesis that the abortion phenomenon was heritable was first proposed by van Heerden (1963, 1964). Van Rensburg (1965) subsequently confirmed this hypothesis when he found, on small numbers of goats, that mohair production characters (with a fairly high inheritance) were linked with abortion. Van Heerden (1964) successfully reduced the abortion rate of a flock, where no system of selection against aborters was practised, by eliminating

Table 1

Reproduction data of normally reproducing and aborting Angora goat does and their progeny

	Normal Dams				Aborting Dams			
	Dam		Progeny		Dam		Progeny	
	N	%	N	%	N	%	N	%
Number of does	108		203		105		154	
Total times mated	627		854		569		638	
Total times pregnant*	604	96.4	782	91.6	535	94.0	558	87.0
Total number of kids born**	756	125.2	779	111.1	481	118.8	561	112.7
Does aborting***	0	0	71	35.0	100	100.0	51	33.1
Kids stillborn****	0	0	8	1.0	13	3.8	8	1.5

*Pregnant: Does kidded + does aborted

**Percentage of lambs born was calculated without bringing abortions into calculation (e.g. only lambs born per ewe lambing).

***Percentage aborters: Ewes aborting per ewe pregnant.

****Stillbirths as a percentage of total lambs born.

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Table 2

Reproduction data of an Angora goat stud from 1961 to 1969 where aborters were culled

Year		1961	1962	1963	1964	1965	1966	1967	1967	1967	1969
1.	Does mated	312	345	367	328	357	361	357	293		316
2.	Does non-pregnant %	8,1	12,1	15,3	4,2	7,3	6,4	10,7	3,8		10,1
3.	Does aborted %	7,1	13,9	4,2	8,8	18,1	13,9	7,5	8,8		2,5
4.	Live Kids %	83,9	73,2	77,4	84,4	75,1	79,3	80,1	83,0		85,1
5.	Multiple Kids %	10,4	9,3	12,3	16,2	20,1	9,4	10,1	4,4		22,8
6.	Kids stillborn %	2,1	1,6	4,4	3,5	0,7	2,0	1,7	3,2		2,8

habitual aborting does. This limited the occurrence to first time aborters only. The present results showed that, after using this method for nine years, the abortion rate of a stud still varied round a mean of 9,4% (Table 2).

In conclusion it appears that genetic progress can only be made up to a minimum value, which is greatly influenced by the environmental conditions, feeding level (van der Westhuysen & Roelofse, 1971) and by the present system of identification and elimination of aborter and potential aborter does. This is probably due to the inability to identify the endocrinological abnormality prior to abortions so that total elimination of aborters is impossible as abortion rarely occurs after the first conception. In addition, selection of does for mohair quality and production may favour potential aborters (van Rensburg, 1965, 1970). Furthermore, intensive selection and use of rams with superior mohair, may also contribute to the problem. Despite the lack of progress in eliminating the problem, we support the approach of van Heerden (1964) that abortion should be constantly eliminated in order to

maintain a low incidence of abortion. More attention could, however, be given in future to the contribution of the ram.

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