

MEASURING FOETAL LOSS WITH REAL TIME SCANNING

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Wastage of potential offspring between ovulation and birth affects reproductive efficiency. Low rates of wastage are difficult to measure accurately using slaughter samples. Ultrasound imaging techniques have the advantages of being non-destructive and non-invasive and allow repeated measures on the same animals.

We are currently examining wastage rates in several flocks of varying fecundity. Merino A flock consisted of approximately 500 ewes run at Tamworth, NSW in 1981 and 1982 (3 and 4 years old respectively). Merino B flock 1981 was the group of 33 mixed age Booroola ewes previously reported (Wilkins et al. 1982). Merino B flock 1982 was a group of 69 mixed age Booroola ewes. Merino C flock 1982 was a group of 59 non-Booroola contemporary "controls", joined and run with the Booroola ewes. Flocks B and C were run at Armidale, NSW. Dorset flock 1982 was a group of 89 adult ewes run at Cowra, NSW. All flocks except the Dorset underwent laparoscopy at the cycle of mating to determine individual ovulation status. The first observation on the Dorset flock was by laparoscopy at 30 days to assess pregnancy status. The fate of ova shed by each ewe was followed by scanning at various stages to determine numbers of fetuses present and by observing lambs born. A summary of these results is shown in Table 1.

TABLE 1 Wastage rates of ova from 0-40 days (percentage of ovulations), or subsequently of fetuses as percentage of those present at start of given periods.

Flock	Ovulation Rate	Stage of gestation (days)			
		0-40	40-60	60-Term	80-Term
Merino A, 1981	1.3	31 [†]			1.4
Merino A, 1982	1.8	37	1.0 [§]		0.9
Merino B, 1981	6.1	67	9.0	1.6	
Merino B, 1982	4.0	60	5.4	8.6	
Merino C, 1982	1.4	17	1.4	1.4	
Dorset, 1982	~ 2 [#]		13.7 [‡]		6.7

[†]For the period 0-80 days [#]Estimated from fetuses/ewe at 80 days.

[§]For the period 40-80 days [‡]Total loss of apparent pregnancies for the period 30-80 days.

The wastage rates from 0-40 days in the appropriate studies above are comparable with Edey's (1969) conclusion that the majority of loss has occurred by day 30. The extent of early loss seen here increased with increasing ovulation rate. The large discrepancy between ovulations and lambs born in highly fecund flocks is also well known and is illustrated by the wastage rates observed. The levels of loss after 40 days in the flocks with lower ovulation rates were small and would often escape detection by other techniques. Wastage in mid to late term in the flocks with higher ovulation rates were variable but significant. The causes of such losses are unknown and much more data are required to assess the practical implications.

EDEY T.N. (1969). *Anim.Breed.Abst.* 37 : 173.

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