THE EFFECT OF TIME SINCE SHEARING ON SHELTERING BEHAVIOUR
BY MERINO SHEEP

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SUMMARY

Sheep were shorn at intervals of 1, 2, 4 or 8 weeks before the day lambing was due to commence. On that day the ewes from different shearing groups were placed in separate paddocks each with 7% of the area sheltered by hedges of a Phalaris hybrid grass. Sheltering behaviour was observed for the next four weeks.

Little use of shelter was made by any group during the day. At night, 80% of ewes shorn one or two weeks at the start of the observations, used the shelter throughout the four weeks, whereas only 30% of ewes shorn eight weeks used the shelter nightly during the experiment. By contrast the percent of four week shorn ewes sheltering nightly was 40% during the first week, but thereafter increased to 80%, so that at the end of eight weeks these ewes were making much more use of shelter than were the ewes shorn eight weeks at the beginning of the ninth week after shearing.

These results suggest that ewes given access to shelter within four weeks of shearing became trained to use it as a night camping area well beyond the period in which they might be expected to seek shelter. This observation could be used in the development of a lambing management system incorporating windbreaks.

INTRODUCTION

The use of grass hedges, planted as windbreaks at 10-20 m intervals is a promising method of protecting newborn lambs and so reducing their mortality (Alexander and Lynch 1980). These hedges may be more acceptable to graziers if they are restricted to a small area of a lambing paddock rather than being planted across the whole paddock. Recent experiments (Lynch and Alexander 1977; Alexander et al. 1979) showed that unshorn ewes do not shelter voluntarily while ewes shorn within seven days of their lambs being due make extensive use of shelter at night or during the day if the weather is inclement. Other experiments (Lynch and Alexander 1977; Stevens et al. 1980) have shown there was no difference in the shelter-seeking behaviour between lambing and non-lambing ewes.

Shearing sheep within a week of lambing has practical disadvantages. An experiment was done to compare the sheltering behaviour of ewes shorn 1, 2, 4 or 8 weeks before lambing was due to start and placed in paddocks with restricted shelter on the day the first lambs in each group were due to be born.

MATERIALS AND METHODS

The experiment was done at Armidale in July, 1979. The winter weather of this area has been described by George et al. (1977) and is similar to the conditions at lambing in the Tablelands of N.S.W., parts of Tasmania, and areas of western Victoria and south eastern South Australia.

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The experimental site was located on an almost flat area of ground with a slight slope up to the east. Windflow was unimpeded over the site except where experimental shelters were planted.

Four separate paddocks each 140 m x 40 m and containing a Phalaris aquatica and Trifolium repens pasture were used; laneways 40 m wide separated the paddocks to minimize behavioural interactions between neighbouring sheep. Each paddock had three 25 m rows, of a Phalaris hybrid (Phalaris aquatica x Phalaris arundinacea) planted 20 m apart at right angles to the prevailing westerly wind.

The paddocks were subdivided into zones by markers (Fig. 1) and sheep were considered to be in shelter if they were found 6 m leeward or 2 m windward of the 1 m high hedges, these areas being in a zone of low windspeed (Lynch and Alexander 1977). Seven percent of the area of the paddock was within these zones of shelter.

Fig. 1. Layout of experiment showing location of Phalaris hybrid hedges which are at right angles to the predominant winds

Fine-wool Merino ewes aged 3 to 6 years, which had lambed at least once were mated to lamb over a 21 day observation period. Sheep were randomly divided on mating date into 4 groups of 40 which were shorn 1, 2, 4 or 8 weeks before the first lambs were expected. Their distribution at 0100, 0500, 0900,
1300, 1700 and 2100 h each day for three weeks was recorded and observations were made at 2100 h for a further week. Night observations were assisted by floodlights. Windspeed and direction, screen temperature and rainfall were recorded hourly.

RESULTS

Weather

The days were generally fine with maximum and minimum temperatures ranging from 14.9°C to 6.1°C and 4.7°C to -9.0°C respectively. In one 26 h period 10.7 mm rain fell and wind averaged 14.4 km/h and in a 12 h period 12.9 mm rain fell and the wind averaged 14.4 km/h. In the fourth week, the weather was similar to the previous 21 days except that there was 9.5 mm of precipitation, mainly as snow.

Use of shelter

During the day few sheep were found in shelter. However in wet windy weather the percentage sheltering increasing from 15% to about 60% in all groups except the 8 weeks shorn sheep in which the proportion sheltering increased from 10% to 38%. At night during wet weather the percentage sheltering in the 8 week shorn group increased (P<0.01) from 28% to 46%. There was little effect in the other three groups.

Over the first seven nights of the experiment, sheep shorn 4 and 8 weeks before lambing clearly made less use of shelter than the more recently shorn animals. However, in the second and third week there was little difference in sheltering at night between sheep shorn 1, 2 or 4 weeks prior to lambing (Fig. 2.)

![Diagram](image)

**WEEKS AFTER SHEARING**

Fig. 2. The mean percentage of sheep shorn 1, 2, 4 and 8 weeks before the start of lambing which were found in shelter at night during weeks 1, 2, 3 and 4 after lambing commenced.
Throughout the four weeks, the sheep shorn 8 weeks prior to lambing made least use of shelter and at night 50% or more camped away from the shelter along the eastern fence. In the first week when 40% of 4 weeks shorn sheep were found in shelter the remainder were also camped along the eastern fenceline.

DISCUSSION

The results show that in the winter conditions characteristic of the Tablelands of N.S.W. and parts of southern Australia, sheep will seek shelter voluntarily during inclement weather and at night if shorn 4 weeks before lambing commences. Since the 8 week shorn group made little use of shelter, whereas the 4 week shorn group was still making extensive use of shelter at the end of the eighth week, it seems that sheltering behaviour can be prolonged by previous experience of shelter. Either the earlier sheltering slows the acclimatization process, or the sheep became accustomed to the sheltered area and habitually use it as a night resting area (camp). A similar contrast in sheltering behaviour was also observed when sheep were exchanged between two 12.5 ha paddocks one of which contained 0.4 ha of shelter (Lynch et al., 1980). We suggest therefore that it may be possible to train pregnant ewes to use a sheltered area for up to 8 weeks or even more after shearing by allowing them access to it for a limited period between shearing and lambing. This would conserve pasture in the lambing paddock, yet permit ewes to be shorn at an acceptable period prior to lambing.

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REFERENCES