

### Perennial grass hedges provide shelter at lambing



*Ewes and lambs sheltering in a perennial grass hedge*

#### What are grass hedges?

Grass hedges are tall pasture species sown in rows, about 10–15 m apart, which are allowed to grow rank during their reproductive phase in spring. As the hedges are normally about 1 m tall, they are best used to improve existing protection in paddocks rather than trying to create shelter in very exposed areas.

Grass hedges are most effective for winter–early spring lambing where cold winds commonly occur. There is less benefit from using hedges for late spring or autumn lambing when temperatures are higher.

The best species for grass hedges are tall growing perennial grasses that remain upright when senescent and are not readily eaten by sheep. Tall wheatgrass is ideal but phalaris, tall fescue and Rhodes grass can also be used. These perennials also use soil water, reduce recharge and protect the soil from erosion.

Between the hedges, a more palatable perennial grass is sown and this species is managed to provide high quality forage at lambing. Correctly established and managed hedges do not require fencing.

Grass hedges have several advantages over shrub and tree belts. They are relatively inexpensive and easy to establish and are able to provide effective shelter the year after sowing. The best protection is close to the ground where it is most effective for small lambs, whereas shrubs often tunnel wind below the canopy. If the hedges are not required in the future, they can be easily removed.

#### Actions summary

- ▶ ***In twin lambs mortality from exposure can be 30–50%, greatly reducing the potential profits from higher lambing rates***
- ▶ ***EverGraze is developing new grazing systems that are more profitable and improve the environment compared with current systems, some which include the provision of shelter to improve lamb survival***
- ▶ ***Several forms of shelter are being tested including tall wheatgrass hedges (Vic), Rhodes grass clumps (WA) and shrubs (NSW)***
- ▶ ***Grass hedges are quick and easy to establish and this sheet explains their management and use to provide shelter at lambing***



Young lamb sheltering in a tall wheatgrass hedge

## Twin lambs benefit from hedges

Research has found that the mortality rates of Merino twin lambs born in shelter areas was half that of twins born in exposed paddocks. However, there was little effect of shelter on the survival of single lambs. Twin lambing ewes need to be identified by scanning after joining, and drafted into a separate mob that is moved into the hedge area a few days prior to lambing. About 30% of Merino ewes bear twins, which means that a relatively small hedge area is needed at lambing.

## Setting up grass hedges

### Site selection

Select a paddock that has some existing protection from the prevailing winds expected during lambing. Existing protection could be topography, remnant vegetation, established shelter belts, or rocky outcrops. Paddocks should be well drained and capable of carrying high stocking rates in winter.

### Recommended species

The hedges at the Hamilton EverGraze Proof Site are rows of tall wheatgrass cv Tyrell. This species was selected as it grows to over 1 m tall, the stems are about 5–7 mm diameter and 'springy' – meaning that they remain upright after animals move through the hedge. Also, when overgrown and rank the species is relatively unpalatable meaning that stock will consume the inter-row forage and leave the hedges relatively intact. Other species such as phalaris, tall fescue or Rhodes grass can be used for hedges but tend not stand up to stock as well as tall wheatgrass.

The inter-row area needs to be sown with a mixture of palatable perennial grass and sub clover. Management and use of the area depends on the animals preferentially grazing the inter-row forage, leaving the hedges relatively intact. The best species for the inter-row area will depend on the region, but in southern areas with heavier soil, high quality tetraploid perennial ryegrass is ideal. In drier regions, phalaris or tall fescue would be more suitable. Perennials are best in the inter-row area as they suppress weeds, get away immediately after the

autumn break and so allow pasture to be saved for winter lambing, and dry the soil out over summer and so reduce waterlogging.

### Direction and spacing of hedges

The hedges need to be placed at right angles to the wind expected during lambing. At Hamilton, the dangerous winds during August and September come from the west (Figure 1) and so north-south hedges provide the greatest protection. It is important to determine the direction of the winds for your locality. The hedges should be 10–20 m apart, and at a spacing that allows efficient use of machinery to spray or cut hay between the hedges.

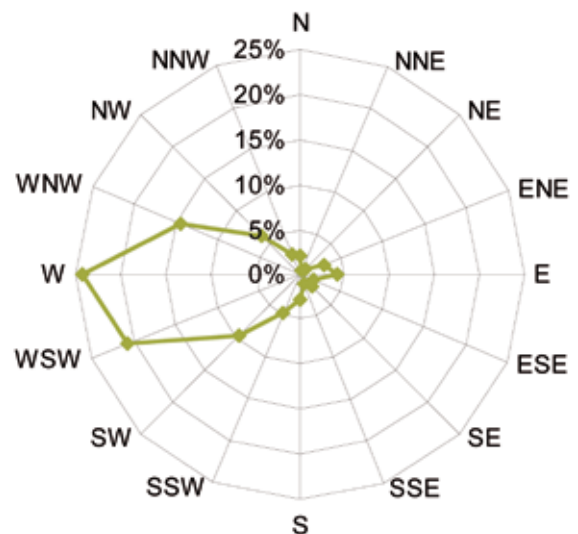


Figure 1. Direction of dangerous winds at Hamilton, Victoria.

Winds were defined as dangerous to lambing if the wind speed at a 2 m height exceeded 15 km/h, and either rain or temperatures below 5°C had occurred in the previous six hours. The points on the diagram represent the direction of dangerous winds, as a percentage of all hours with dangerous winds during August and September.

### Establishing hedges

Tall wheatgrass can be sown in autumn or early spring. Spray the paddock with a complete knockdown herbicide and mark out the position of the hedges to suit future farm operations, such as the width of the boom spray, or a multiple of drill widths.

Hay cut between the tall wheatgrass hedges (right)

Tall wheatgrass hedges grazed in autumn (far right)

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## Actions



Direct drill the tall wheatgrass at 10 kg/ha with 100 kg/ha DAP. The drill needs to be modified so that seed is only sown in a 1 m section (block off the seed box with wood or heavy card). The inter-row area should be sown after sowing the hedges.

Through the winter and spring, normal post-sowing management should be applied, ie control weed and insect pests, and graze as required with large mobs for short periods.

In the first spring after sowing, the hedges and inter-row area must be spelled from grazing to allow the hedges to grow and send up seed heads. In late spring, the inter-row area should be cut for hay. The area should again be spelled from grazing until the seed heads on the tall wheatgrass are in the soft dough stage, which in southern Victoria occurs in January. Sheep can graze the area at this time and they will eat the seed heads and stop seed moving out of the hedge area.

Over summer and autumn, the area can be rotationally grazed with sheep but stock must be removed from the area once the inter-row forage is consumed and if the hedges start to be eaten.

### Fertiliser

Nitrogen fertiliser is essential to maintain the vigour of the hedges. The tall grass allows little room for clover and livestock seldom transfer nitrogen into the hedge itself through dung or urine. Nitrogen should be applied at 50 kg N/ha after the autumn break. A spinner spreader driven through the middle of each inter-row area is very effective as the hedges intercept a lot of the fertiliser being applied, ensuring the fertiliser gets to the right area.

Other nutrients may be required to ensure that growth of the inter-row area is maximised. The target Olsen P (phosphorus) for soils is 15 mg/kg. The target Colwell K (potassium) depends on topsoil texture, and ranges from 126 mg/kg for a sand to 160 mg/kg for a clay loam.

### Carrying capacity of hedge areas

Well fertilised perennial pastures in southern Victoria produce 20–30 kg DM/ha each day between May and July meaning that 2000–2500 kg DM/ha should be available by August. Pasture growth in the inter-row area can be increased by application of nitrogen fertiliser or stimulants such as gibberellic acid.

Assuming 2500 kg DM/ha is available in the inter-row areas at the start of August and lambing lasts for 30 days, how many ewes can graze the area?

#### Pasture available in the inter-row area

Pasture on hand at lambing	2500 kg/ha
Plus growth during lambing (30 days x 30 kg/ha/day)	+ 900 kg/ha
Less residual pasture at end of lambing	– 1200 kg/ha
Pasture available for ewes over lambing	= 2200 kg/ha

#### Pasture requirement of a twin lambing ewe

Daily feed consumption of ewes, assuming 25 MJ/day intake over late pregnancy and early lactation, and pasture is 11 MJ/kg	= 2.3 kg/ewe/day
Allow for 20% wastage	x 1.2
Daily pasture requirement	= 2.7 kg/ewe/day
Pasture requirement per ewe for 30 day lambing period	= 83 kg/ewe

#### Carrying capacity of the inter-row area

Pasture available for ewes	2200 kg/ha
Pasture requirement per ewe for lambing	÷ 83 kg/ewe
Carrying capacity	= 27 ewes/ha

Ewes seek the privacy of a hedge before lambing (right)

Monitoring wind speed in hedges (far right)

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## Actions



## Experience with hedges

### Stocking density

No clear information exists on the effect of stocking density of twin lambing ewes on mismothering and marking percentage. Anecdotal evidence suggests that the more dispersed ewes are at lambing, the less mismothering occurs. However, this experience is with normal pasture paddocks where inadequate pasture may be available and there is no possibility for lambing ewes to easily separate from the main mob. Hedge areas provide abundant high quality pasture for ewes so they do not need to move away from lambs to graze and hedges provide privacy so new lambs are less likely to be stolen by other ewes. At Hamilton, mobs of up to 40 ewes have lambed on 0.4 ha hedge areas without any obvious mismothering problems.

### Lambing behaviour in hedges

Ewes move away from the mob and lamb on the lee side of the hedge. In bad weather, the lambs are often in the hedge. The ewes move easily through the hedges and make tracks. Ewes will graze the hedge material and so by the end of lambing much of the leaf will be eaten.

### Hedges reduce wind speed

Measurements at lamb height (40 cm) demonstrated that wind speeds in the immediate lee of the hedge

are less than 1% of that in open areas. Hedges with a north-south orientation provided good protection against winds from a westerly, south-westerly and north-westerly direction. Under these conditions, a 1 m wide area in the lee of the hedge had wind speeds less than 20% of those in open areas. Anecdotal observation indicates that lambs tended to sleep adjacent to the hedge or within it.

### Predator control

Hedges can harbour foxes, so baiting is recommended. Given that the hedge area is a specialised lambing area, other control measure such as the use of electric fences to exclude pests could be considered.

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### Further information

J C Pollard - Shelter for lambing in New Zealand,  
<<http://www.rsnz.org/publish/nzjar/2006/043.php>>.

## EverGraze on line: [www.evergraze.com.au](http://www.evergraze.com.au)

For further details of EverGraze and to find out about activities in your area go to <[www.evergraze.com.au](http://www.evergraze.com.au)> or write to Geoffrey Saul, National EverGraze Coordinator, 98 Leura Lane, Hamilton, VIC 3300.

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