



# Split joining proves flexible in a variable climate

Merino producers will achieve greater flexibility and reduce risk in their ewe operations by adopting a split joining strategy, according to recent research coming out of *EverGraze* — *more livestock from perennials*. The following article highlights the benefits and best approach for producers looking to adopt the innovative strategy in their flocks.

Photo: EverGraze

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**Conservative lamb producers** in southern Australia often mate Merino ewes during summer, to lamb autumn to mid-winter. This approach aims to ensure prime lambs have sufficient time to reach a marketable weight before spring pasture growth declines in quality as summer gets into full swing.

**This system can only support low stocking rates as the ewe's peak feed demand coincides with low pasture production during winter.**

A more aggressive approach involves mating Merino ewes during autumn, to lamb during Spring, matching ewe feed demand with supply. But, a failed spring will put this system at risk due to a high supplementary feed requirement and low returns from sale of unfinished stock.

## Split joining

Split joining involves mating a proportion of a Merino flock to terminal sires during summer to lamb during mid-winter. The rest of the flock is joined to Merino rams during autumn for a spring lambing, with the peak demand for feed occurring during the spring pasture growth phase.

Split joining adds flexibility and reduces risk across an all-ewe operation. If spring fails to deliver the expected flush of feed, winter-born lambs can be weaned and sold early as store lambs, reducing the grazing pressure come spring. If necessary, early lambing ewes can be sold at the same time.

Selling lambs early will significantly reduce gross feed consumption and will allow the spring-born lambs to be maintained through to acceptable weaning weights,

protecting valuable Merino genetics through higher weaning percentages.

## Implementation

The following guidelines allow for prime lambs to be born from July and Merino lambs from September. Lambing times will vary between regions, so match peak feed demand with expected pasture growth during spring.

For prime lambs, join 60 per cent of the Merino flock in February for a July lambing. A two-to-three week joining will allow for one ovulation cycle and ensure a tight lambing period, allowing lambs to reach sale weights at a similar time. Select the ewes that are in good condition and body weight and not suitable for the Merino flocks breeding objectives. Results from the Wagga Wagga, New South Wales, *EverGraze* Proof Site suggest that about 80% of ewes will fall pregnant during a 14-day mating. Scan to identify dry, single and twin ewes. Dry ewes can be re-mated with the later-lambing flock or culled.






Before joining ensure rams are in sound condition and ready to join — use joining rates of 1.5% plus one to maximise ewes joined during the tight joining period. Scan ewes at 45 days from end of joining.

Treat single and twin-bearing ewes in the same way until the last two months of gestation. After day 90, provide twin-bearing ewes with additional high-quality feed and sheltered paddocks for lambing.

Join the remaining 40% of ewes and any dry ewes from the previous joining to Merino sires during April for a September lambing.

A four-week joining will keep lambing tight, but allow for most ewes to ovulate twice. Scan ewes after 45 days and cull any dry ewes from this second joining.

## At a glance

-  Split joining reduces risk and provides greater options in a variable climate.
-  A split joining strategy allows targeted feeding and management of winter-lambing ewes and a uniform line of lambs for sale.
-  During a shorter spring, de-stocking can occur to provide pasture for later lambing ewes, winter-drop lambs can be sold early as stores and under extreme conditions ewes can also be sold.
-  During an average spring, lambs can be held on longer to better utilise pastures and achieve heavier weights.
-  Dry ewes from the summer joining can be rejoined during autumn to lamb during spring, while underperformers are identified and culled.



To simplify the strategy as much as possible, combine ewe age groups and shearing times in average seasons. For example, wean lambs during late November–December and shear ewes during autumn.

Effectively the only difference to a more traditional system is that some ewes are mated and managed separately from February. From scanning during April there could be some additional mobs if ewes are separated into single and twin-lambing groups.

Target any supplementary feeding to specific mobs (for example twin-bearing ewes) to reduce overall feeding costs.

### Ewe selection

Research has shown a strong relationship between condition score at mating and lambing percentage. To maximise weaning percentages and production per hectare, select ewes of a condition score of three (CS3) or higher for prime lamb production.

Class ewes at weaning into two groups — less than CS3 and CS3 or higher — to identify those that need access to better pasture to improve condition before the next joining.

## Summer-active perennials, such as lucerne, can improve ewe condition before joining.

Also consider the genetic improvement of the Merino flock. Older and lower wool quality ewes can be joined for prime lamb production, leaving the better wool-quality ewes to be joined to the Merino rams and continue the flock's genetic improvement.

Select terminal or maternal sires with low or negative estimated breeding values (EBVs) for birth weight or slim shoulders and smaller conformation to reduce lambing difficulties. Some small frame Merino ewes

**TABLE 1 Estimated production and profits of EverGraze systems\***

System	Gross margin (\$/ha)
Self-replacing Merino (winter lambing)	\$300/ha
50% terminal 50% Merino (September lambing),	\$490/ha
50% terminal, 50% Merino (split joining)	\$440/ha

\*The simulation assumed 120% weaning rates and average prices (320c/kilogram dressed weight — 45% liveweight — for crossbreds and 240c/kg dressed weight — 43% liveweight — for Merinos) and returns for meat and wool (898c/kg clean).

Source: EverGraze

**TABLE 2 Actual gross margins**

	Self-replacing Merino (\$/ha)	September lambing (\$/ha)	Split joining (\$/ha)
2006-2008 average	52	-6	105
2006 (10 DSE mid-winter, 252mm)	12	-55	53
2007 (10 DSE mid-winter, 477mm)	86	56	162
2008 (13 DSE mid-winter, 536mm)	60	-20	100

Source: EverGraze



Photo: Laureta Wallace

may not be suitable to join to genetically large-framed terminal sires.

### Comparing systems

EverGraze researchers are investigating production systems that can increase profits in the high-rainfall zone of southern Australia.

At the Wagga Wagga Proof Site, pastures consist of phalaris (60%), tall fescue (20%) and lucerne (20%) and three systems are being evaluated (see boxed section) — self-replacing Merino (winter lambing), 50% terminal 50% Merino (September lambing) and 50% terminal, 50% Merino (split joining).

Ewes rotationally graze pastures for maximum utilisation throughout the year. When pasture cannot meet animal requirements supplementary feed is supplied.

The mid-winter stocking rate across all systems is 13 dry sheep equivalent (DSE) per hectare. The stocking rate varies between systems as feed demand changes during the year with lambing times. For example, the split joining mobs run higher stocking rates than the self-replacing Merinos as they have lower feed requirement during July.

Before starting the evaluation, computer-simulated predictions were used to estimate

the likely production and profits from each system (see Table 1).

While these estimates indicate that later lambing systems are more profitable in average or better rainfall years, the results obtained in three poor years indicates gross margins of split joining systems can be less variable (Table 2), yet still deliver high gross margins in better years (Table 1).

All systems are designed to allow producers to retain replacement Merino ewes if required. Rainfall throughout the trial has been below average, and the lack of spring rainfall in all years adversely affected the September lambing systems — they needed more supplementary feeding and produced less lamb (kilograms) per hectare than the split joining system. But split joining provided flexibility — during 2006 researchers sold crossbred lambs in this system at weaning weights (10 weeks) of 36kg, while during 2008 lambs were kept to sell at higher weights. **FA**

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## Systems under the microscope

The following productions systems are currently being evaluated at the Wagga Wagga EverGraze Proof Site.

- ➔ **Self-replacing Merino (winter lambing)** — all ewes joined during February for July lambing as is common practice in the region. Stocking rate 5.6 ewes/ha to allow for lactating ewes during July.
- ➔ **50% terminal 50% Merino (September lambing)** — 50% of ewes mated to Merino sires and 50% to terminal sires during April for September lambing. Stocking rates is 9.8 ewes/ha.
- ➔ **50% terminal 50% Merino (split joining)** — 50% of ewes mated to terminal sires for July lambing. The decision when to sell terminal lambs is based on spring pasture growth. If favourable then lambs can be retained longer to heavier weights. Stocking rates is 7.1 ewes/ha.