

Magnificent Maidens

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Maiden ewes represent a large part of your ewe flock, at an average of $\approx 30\%$ of breeding ewes. They are your best genetics, however getting good reproductive outcomes from maiden ewes remains a challenge for many producers. The traditional maiden ewe is one that goes to the ram for the first time at 19 months of age. However, in a maternal composite, first-cross ewe or shedding ewe based system it is more likely to be a ewe joined at 7-9 months of age. The principles are the same for whichever of these two classes you are working with.

The size of the gap

The difference between the reproductive rate of maidens and their older counterparts is usually around 20%. This can be considerably higher in some cases. The aim of management of maiden ewes is to close the gap between their performance and that of the older ewes. Research into the reproductive performance of ewes has largely focussed on mature ewes. There has been an increased focus on ewe lambs more recently, however limited work has investigated the reproductive performance of traditional maidens joined at 19 months of age.

The Magnificent Maidens Producer Demonstration Site (PDS)

With the valued support of MLA, we are running a PDS project around the country to help understand and demonstrate the key factors that are required for achieving successful reproductive outcomes from maiden ewes joined at 19 months of age. Each host property involves two groups of at least 200 maiden ewes. One group of ewes is allocated to 'normal' treatment i.e. fed as per traditional management for maidens at the farm and the second group is allocated to 'best-bet' management, where ewes are fed 30% greater energy and protein than the 'normal' group. The 'best-bet' management group aims to demonstrate the value of adopting current best-practice management for maiden ewes. Data including weights and condition scores at key stages of the reproductive cycle plus pregnancy scanning results are collected until ewes are at least 2.5 years old.

Keeping your eye on the scales

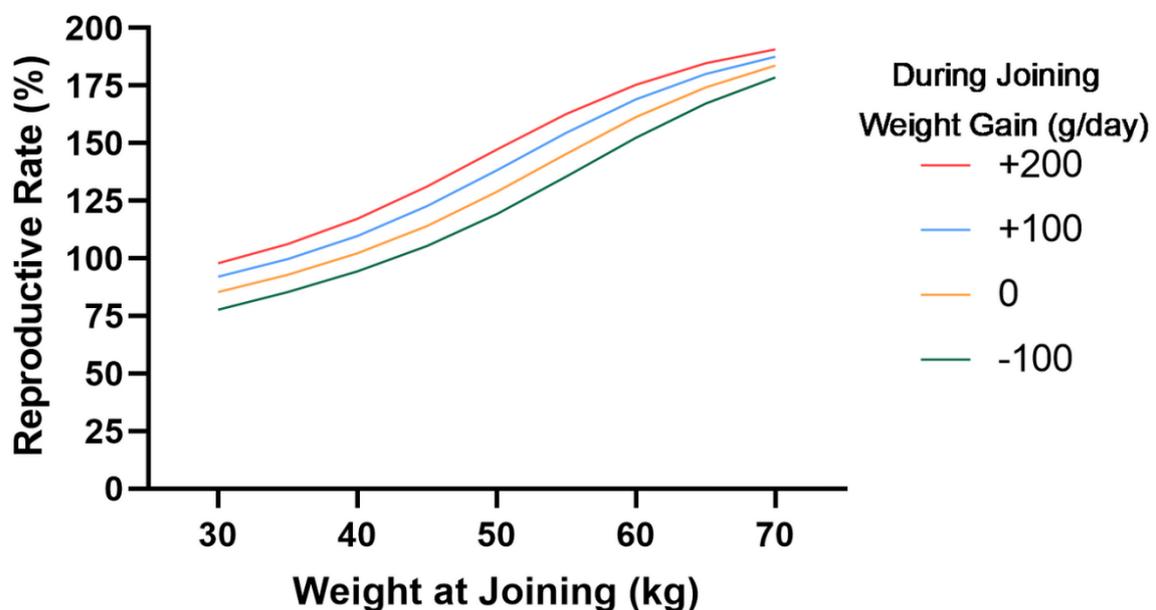
The impact of weight at joining is one of the best-bet concepts being tested via the PDS.

Four PDS have now been completed; two in Victoria and two in Western Australia. Reproductive data from 2,154 ewes across the four sites were analysed

to assess the impact of joining weight and growth during joining on the reproductive outcome as a maiden.

The key findings were:

- Joining weight is a more useful predictor of reproductive rate than condition score for maiden Merino hoggets.
- For every 1kg increase in weight at joining, there is an average 3.2% increase in reproductive rate.
 - Economic analysis demonstrated that improvements in joining weight could be profitable when feed supply was less than \$0.03/ME.
- For every 100g/day increase in weight gain during joining, there is an average 9.2% increase in reproductive rate.
- Pre-joining weight gain was not significant for reproductive rate.



The key take-aways from these findings are:

- Weigh your maidens regularly.
- Ensure that maidens are not losing weight during joining and ideally that they are growing.
- Look to increase the weight of maidens at joining when feed is cheap to maximise the reproductive benefit.

Data at joining and pregnancy scanning have now been collected for these ewes at their second joining as a 2.5-year old. The data will be analysed to investigate impacts of best-bet management of the ewes between weaning of their first lamb to joining at 2.5 years old on their conception and reproductive rates at their second joining.

Project resources

If you haven't already, make sure to check out the recordings from the three-part **online course** held for the project on **The Hub**. The course presented the science behind joining maiden ewes plus early results and learnings from the project.

Keep an eye out in early 2024 for **case study videos** featuring our PDS host producers. The case study videos will discuss how the producers manage their maidens, the gap between performance of maidens and older ewes on their farm, and what they've got out of participating in the PDS so far.

The **Head Shepherd podcast** featured Charlie Wooton, who completed his Honours project utilising the Magnificent Maiden's PDS. Charlie's project investigated the impacts of weight and condition score at joining, and weight gain from pre- to post-joining on the reproductive rate of maiden ewes. You can find the podcast here: <https://headshepherd.com/episodes/improving-reproductive-performance-in-maiden-ewes-with-charlie-wootten-816>

Upcoming events

Magnificent Maidens Field Days

We will be holding a series of field days across Australia in early 2024. Make sure to keep an eye out for the dates which will be released early in the new year. The interactive, half-day field days provide a great opportunity to learn from participants in the Magnificent Maidens project as well as to hear from the project team on the latest findings from across the project.