



# Grassgro modelling upscaling at Nimmitabel

*Which pasture system (Phalaris or lucerne) is better suited to address the “feed gap” deficit issue over winter in terms of sheep enterprise productivity/profitability and therefore overall resilience to drought?*

## Introduction

As seasons become increasingly variable, the ability of a business to address the issue of a feed deficit during winter likely influences the productivity and profitability of a sheep enterprise.

Feed gaps occurring during the winter months across the Monaro region can be managed by selecting a suitable pasture base to support the productivity and profitability of a farm business.

Grass Gro software was used to compare a phalaris vs lucerne pasture system to address the ‘feed gap’ that typically occurs during winter and the effects on resilience of a sheep enterprise. The data used in the modelling analysis by Dr Susan Robertson analysed phalaris, lucerne and a mix of phalaris and lucerne pastures from 1970–2019 for the Nimmitabel region.

## Site statistics

**Location:** Nimmitabel

**Enterprise:** Self-replacing Composite (4 sheep/ha)

**Pasture Species Compared:**

1. Phalaris
2. Lucerne
3. Phalaris/lucerne mix

**Years simulated:** 1970–2019



## Key messages

Lucerne's dormancy pattern extends the winter feed gap compared with Phalaris but provides better quality and quantity of feed over the summer/autumn period when Phalaris has poor growth.

Sheep enterprises which can better utilise high quality summer/autumn pasture will gain more benefit from lucerne (ie. finishing), while enterprises with a high winter demand (ie. preparing breeding ewes for spring lambing) would be advantaged over winter with a Phalaris system due to the different growth patterns.

An established lucerne pasture provided higher quality feed and allowed faster lamb growth rates and sale weights compared with Phalaris when weaners were finished over the summer/autumn period, and the advantage occurred in drought and better seasons.

Gross margins (Figure 2) may be increased through use of lucerne rather than Phalaris pastures if additional income produced is greater than establishment and maintenance costs. Long-term persistence of lucerne pastures can be harder to maintain and may require more frequent re-sowing than Phalaris.

The median gross margin for the sheep enterprise grazing lucerne pastures was \$225/ha higher than for Phalaris (Figure 2) driven by a higher sale weight of lamb (65 vs 52 kg) underpinned by the higher feed quality of lucerne and a lower requirement for supplementary feed.

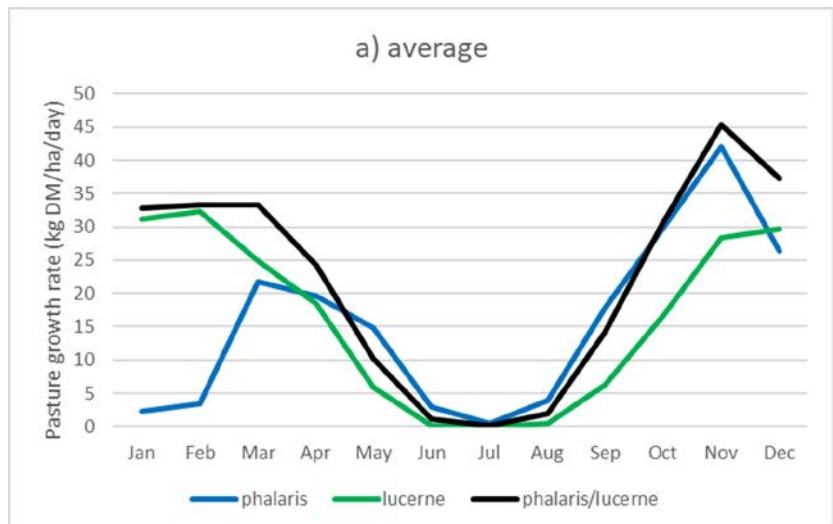


Figure 1: Average monthly pasture growth rates (4.0 ewes/ha)

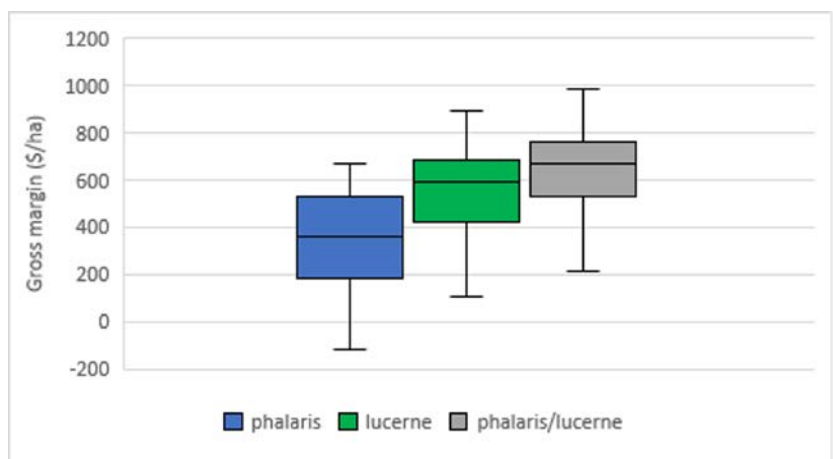


Figure 2: Box plots of gross margins for a composite enterprise grazing pastures at Nimmitabel 1970–2019.

For more information  
[monarofarmingsystems.com.au](http://monarofarmingsystems.com.au)



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