

Lucerne Establishment Trial

The aim of this trial as to assess the impact of different establishment techniques on lucerne plant densities.

Summary

Peas vs Cereal: Field peas will not compete with the lucerne seedling for light and moisture as much as a cereal.

Peas/cereal vs sowing alone: Field peas and cereals provide the opportunity to generate income in the year of lucerne establishment.

Background

In the Mallee, lucerne is often undersown with a cover crop to avoid losing income in the first year of establishment. This cover crop is often a cereal. However the competition from the cereal can lead to sub-optimal lucerne establishment, or complete failure. Using field peas as a cover crop reduces moisture competition and shading relative to a cereal. This is particularly important in dry years where competition for moisture is great.

Method

The lucerne trial was established at Sea Lake. Plots were sown with 4 kg/ha of Siriver lucerne, and the cover crop at the rates in Table 4.18. All treatments were replicated three times.

Results

Table 4.18 Crop yields, plants/m² and gross margins in relation to various lucerne establishment techniques

Treatment	Crop Yield	Lucerne Establishment (plants/m ²)	Gross Margin*
Sown Alone	-	10.0	
Peas (100 kg/ha)	0.54	10.9	- \$11
Barley sown at 30 kg/ha	2.15	3.9	\$159
Barley sown at 60 kg/ha	2.23	2.0	\$162

*Gross margin using the prices; barley - \$120, peas - \$220

Interpretation

Lucerne sown alone and sown under field peas both achieved optimal plant densities (8 to 12 plants/m²). The lucerne sown under both barley treatments struggled through the season producing a poor to moderate stand of lucerne.

Commercial Practice

To guarantee an optimal strike of lucerne, competition from other plants should be should be minimised. Using peas as a cover crop will give a greater chance of achieving an optimal strike due to lower light and moisture competition.