Legume species comparison

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Purpose:	This was a small trial in which alternative break crops were sown into a deep sand.
Location:	Badgingarra Research Station
Soil Type:	Gravelly sand
GSR:	430mm

BACKGROUND SUMMARY

DAFWA conducted a large research program during the late 1990's that examined the yield performance of grain legumes in a wide range of environments throughout WA. However, most of these trials were conducted on soils well suited to grain legume species, loams or clays. Much fewer trials have been conducted on acid sands with these species.

In one study conducted in 2005 seven species were compared against each other on soils not considered ideal for grain legume crops (sands) located from Dandaragan to Wongan Hills. In general narrow leaf lupin was the most profitable break crop option on deep sands because of significantly higher yield than the other species on these soils.

TRIAL DESIGN

Varieties used included Kaspa pea, Genesis 510 desi chickpea, Cassab lentil and Andromeda albus lupin. Seeding rates were 100kg/ha for pea and chickpea, 70 kg/ha for lentil and 150 kg/ha for albus lupin.

Plot size: 18m x 1.52m

Replicas: 3

Seeding date: 26 May 2009

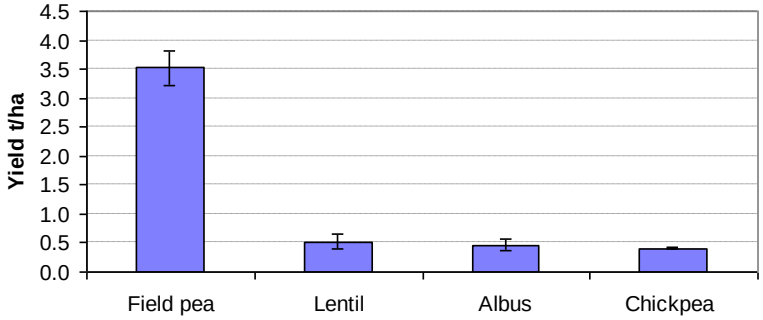
Fertiliser: **At seeding:** DAP @ 80kg/ha

Herbicide: **Post:** Select 500ml/ha + Hasten 0.25L/ha (17 June); Field Peas, Brodal 150ml/ha (25 June); Albus Lupins, 200ml/ha (25 June); Lentils 100ml/ha (25 June); Select 500ml/ha + Hasten 0.25L/ha (29 June)

Insecticide: **At seeding:** Dominex 100 ml/ha

RESULTS

Badgingarra station species comparison



DISCUSSION

These results showed that field pea was much better suited to the deep sand than lentil, albus lupin and chickpea. This is consistent with results of the previous study undertaken in 2005. This is not surprising because it is well known that field pea is adapted to a much wider range of soils than some of the other pulse species. Narrow leaf lupin was not included in this trial but it was grown in a crop variety testing trial alongside. The highest yielding narrow leaf lupin varieties, Mandelup and Jenabillup, yielded 3.4 t/ha. It should also be noted that in the 2005 study narrow leaf lupin was the most profitable break crop option on deep sands because of significantly higher yield than the other species on these soils.

Lupins remain the standard recommended break crop for deep sands due to their proven ability to yield on these soils. Growers considering field pea should be aware of the high erosion risk of field pea stubble. Grazing of field pea stubble will result in bare patches and wind erosion risk.

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