

## MANAGEMENT STUDIES OF NEW NAVY BEAN VARIETIES

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New navy bean varieties have been released which are higher yielding, more erect and more disease resistant than the old varieties. The new varieties are also later maturing.

Prospective new varieties for release, and traditional varieties were compared over four growing seasons in successive years both before and after varietal release. The intention was to fine tune recommendations for crop management soon after varietal release.

### MATERIALS AND METHODS

The irrigated management trials sown at Kingaroy over four years, were of two types: a) date of sowing at monthly intervals from November to February, b) row spacing and population trials with January sowing. The trials included five varieties (Actolac, Rainbird, Sirius, Dalray, Spearfelt) with a range of maturities.

### RESULTS AND DISCUSSION

a) *Date of sowing.* Over sowing dates from mid-November to mid-February, the December date resulted in slightly greater yields (non significant) yields than a January sowing although in one year *Macrophomina* grey mould associated with hot weather reduced the December yields by 75%. The December date was significantly greater yielding in two of the four years. The potential for better yields with a December sowing has to be qualified by an increased risk of crop loss from disease. Grain yields were depressed by 20-25 per cent with sowing in November or February, with a *Macrophomina* risk also important with November sowing. Late maturing varieties were marginally greater yielding in a December than in a January sowing, however early maturing varieties tended to yield best with a January sowing.

b) *Row spacing x population.* Although January sown each year, this trial was severely affected by *Macrophomina* in one year, to a greater extent at 25 cm row spacing than at 90 cm row spacing. Over the other three years, a 10% greater yield was obtained with narrow row spacing. With a high seeding rate of 300 000/ha contrasting a low rate of 150 000/ha, there was an associated yield gain of 7%. Although the varieties differed in plant habit and maturity, no significant interaction was detected with row spacing or population treatments. Significant yield improvements with narrow rows were found in two of the three years.

### CONCLUSIONS

Optimum sowing dates for navy bean varieties in the Burnett are December-January with late maturity and January with early maturity. Significant yield gains are achieved under irrigation with both narrow rows and high seeding rates. At high seeding rates lodging was less and maturity was earlier by one day, while in narrow rows seedling survival was 50% greater.

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