

Nyngan CWFS Site - Mixed Pulse Trial

Sharon Taylor, Central West Farming Systems
Greg Brooke, NSW Agriculture, Nyngan

Key Points

- Seasonal conditions of 2003 limited the yield of pulse crops, with the average yield below 0.5 t/ha.
- The highest yielding pulse crop was Field Peas. Vetch was the lowest yielding crop
- The highest yielding variety was Dundale field peas, whilst Excel field peas were the lowest yielding variety.

Introduction

In 2003 the Nyngan regional site group decided to investigate the yield potential of several pulse crops. These pulse crops included field peas, chick peas, faba beans, lupins and vetch. The trial was designed as a randomised block, with 3 replicates. It was located at 'Coreen' in a

paddock which had a failed wheat crop in 2002 and wheat in 2001. The trial was sown on the 2nd May with 50 cm of subsoil moisture and 130 kg/ha DAP fertiliser. The pulse varieties and their sowing rate can be seen in Table 1. Verdict®520 was used as an in-crop spray for grass weeds at 0.05 L/ha.

Table 1. Pulse varieties and sowing rates (kg/ha)

Crop	Variety	Sowing rate
Field peas	Dundale	100
	Morgan	100
	Excel	100
Chickpeas	Howzat	80
	Jimbour	80
Faba bean	Fiesta	100
Lupins	Gungurru	70
	Ultra	80
Vetch	Blanchfleur	20

The rainfall figures for the Nyngan site can be seen in Figure 1. The annual rainfall was 348 mm, which is below average, whilst the growing season rainfall was 225 mm.

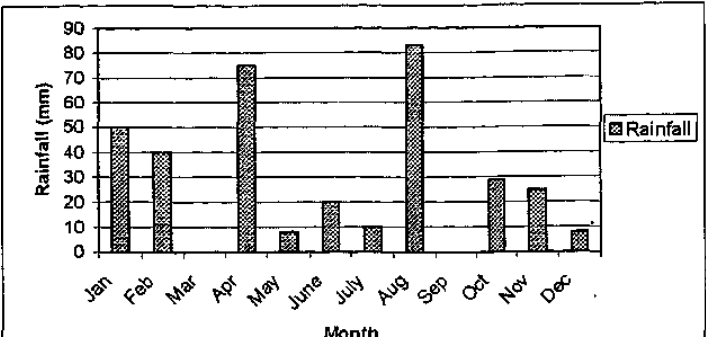


Figure 1. Nyngan Regional Site Rainfall 2003

Results

The average yield of each of the pulse crops can be seen in Figure 2. This figure shows that field peas yielded significantly

higher than all other crops, whilst vetch yielded lower than all other crops, except for lupins.

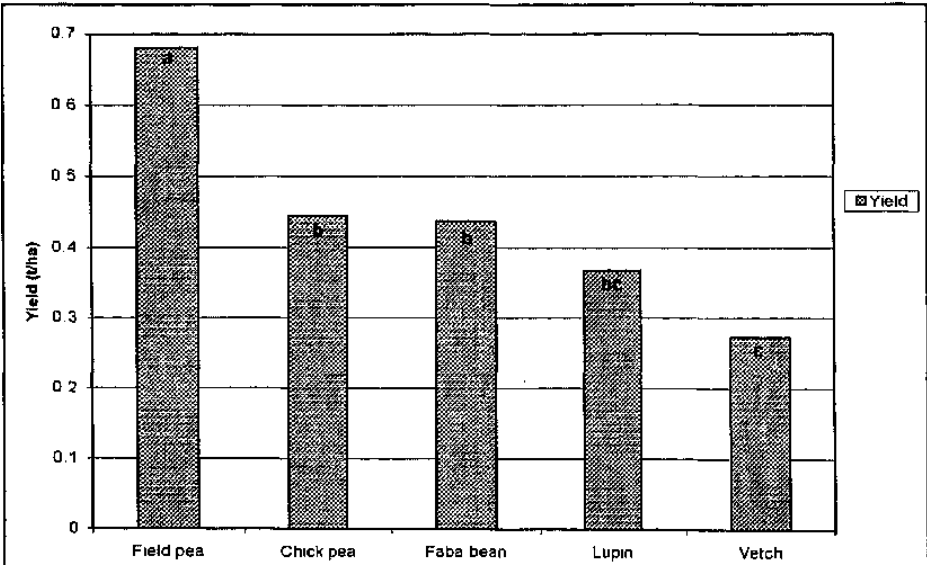


Figure 2. The yield of pulse crops at Nyngan in 2003

Note: Bars that have different letters are significantly different.

The average yield of each of the pulse varieties can be seen in Figure 3. This figure shows that the highest yielding

pulse variety is Dundale field peas, whilst the lowest yielding pulse variety is Excel field peas.

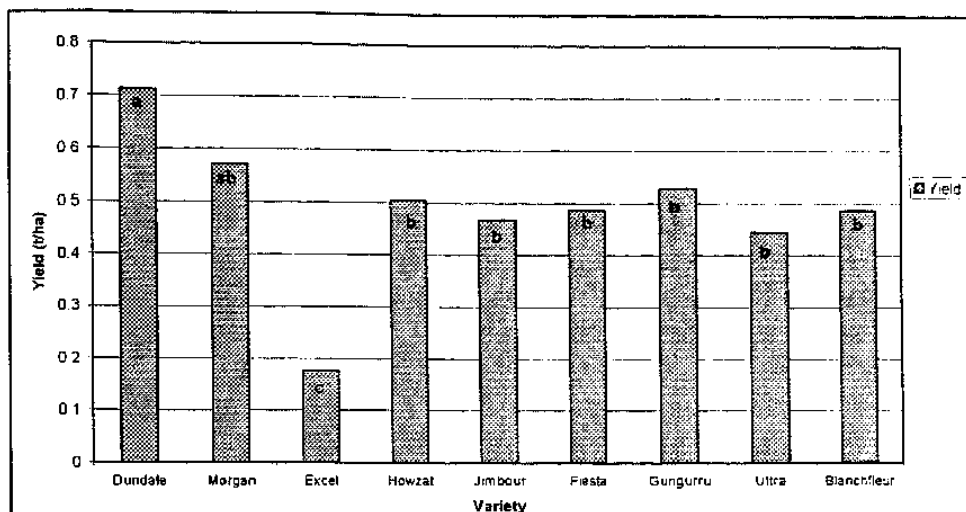


Figure 3. The yield of each pulse crop variety at Nyngan in 2003

Note: Bars that have different letters are significantly different.

Discussion

The seasonal conditions of 2003 severely limited the yield of the pulse crops in this trial, with the average yield less than 0.5 t/ha. A heatwave in early October, which was followed by several frosts, and a growing season rainfall of 225mm limited pulse yields. The pulse variety which was the most affected by late frost was Excel field peas. These late frosts aborted open flowers and caused developing seeds to be "snap frozen" in the pod and killed. The late frosts also combined with October rainfall resulted in the development of a disease, known as Bacterial blight. This disease limited yield to such an extent that Excel was, statistically, the lowest yielding variety in the trial. At the Southern New South Wales Grains Update in Wagga it was reported by Trevor Bretag (DPI, Horsham Vic) and Eric Armstrong (NSW Agriculture, Wagga NSW) that Bacterial

blight was found in most field pea varieties in 2003, although the most seriously affected varieties were Excel and Kaspa.

It can be concluded, from this trial, that in Nyngan in 2003, with difficult seasonal conditions, the pulse crop with the highest average yield was Field peas, whilst the pulse crop with the lowest average yield was vetch. In relation to varietal yields it can be concluded that Dundale field peas had the highest yield, whilst Excel field peas had the lowest yield, due to frost and Bacterial blight.

Acknowledgement

On behalf of the Nyngan Regional Site group we would like to thank Will & Steven Carter, Tom Fitzgerald, Daryl Reardon, Jim Presley, Tim McNee and Cath Evans. Your support and help with this trial was greatly appreciated.