

L6. Sowing Time x Disease Management, MRZ Yorke Peninsula (Paskeville), South Australia

Aim

To maximise yield of new lentil varieties through the identification of optimum sowing dates and disease management strategies.

Treatments

- Varieties: Boomer, Nipper, Nugget, PBA Blitz, PBA Bounty, PBA Flash, CIPAL0501 and CIPAL0611
- Sowing dates: 21 May (Early), 11 June (Mid), 2 July (Late)
N.B. Due to herbicide damage the early sowing date was removed from analysis
- Treatments: Nil – no fungicide applied
Canopy closure – 500ml/ha Carbendazim at canopy closure
Weather – 500ml/ha Carbendazim at canopy closure, plus before next rain front (>14 days later)
Complete - 500ml/ha Carbendazim at canopy closure, plus 500ml/ha Carbendazim + 2L/ha Chlorothalonil before next rain front (>14days later)
- Fertiliser: Map + Zn @ 90kg/ha

Results and Interpretation

A dry spell immediately after the early sowing date meant that metribuzin was applied PSPE on dry and cloddy soil, which was followed by over 25mm of rain just after emergence. This meant that the herbicide was washed into the lentil root zone, and high plant damage and mortality was observed at this sowing date. This sowing date has therefore been removed from analysis.

Due to the favourable season finish and only minimal disease there was no sowing time effect in this trial in 2010. Grain yield results showed that PBA Blitz yielded higher than all other varieties except Nipper (Table L6.1). PBA Bounty was lower yielding than all other varieties except Nugget. All other varieties performed similarly.

Some differences in grain weights were observed in response to sowing date between the varieties (Table L6.2). Boomer showed a reduction in grain weight as sowing was delayed, while Nipper, PBA Bounty and PBA Flash displayed increased grain weight when sowing was delayed. All other varieties showed no difference between the two sowing dates.

Table L6.1. Grain yield of 8 lentil varieties at Paskeville, 2010

Variety	Yield (t/ha)
Boomer	3.91
PBA Bounty	3.63
CIPAL0501	3.86
PBA Blitz	4.20
CIPAL0611	3.98
PBA Flash	3.94
Nipper	4.01
Nugget	3.82
LSD (P<0.05)	0.21

Table L6.2. Effect of sowing date on grain yield of 8 lentil varieties at Paskeville, 2010

Variety	Grain Weight (g/100)	
	11 June	2 July
Boomer	7.00	6.72
PBA Bounty	4.03	4.21
CIPAL0501	5.48	5.41
PBA Blitz	5.49	5.49
CIPAL0611	4.88	4.92
PBA Flash	4.97	5.17
Nipper	3.40	3.57
Nugget	4.34	4.34
LSD (P<0.05)	0.13 (0.09 same TOS)	

Key Findings and Comments

- Safe application of PSPE herbicides in lentils (metribuzin in this situation) is very reliant on seasonal conditions around the time of sowing. Whilst yield potential is maximised by earlier sowing there is increased risk of crop injury from herbicides.
- Winter and spring seasonal conditions were favourable for lentil production in 2010, and lentil yield averaged 3.9t/ha across all varieties.
- There was no sowing date response for grain yield at this site in 2010. There was only low to moderate levels of disease and so earlier sown lentils were not penalised by disease, and later sown lentils were able to capitalise on the late rain.
- Grain weight was equal or higher at the later sowing date for all varieties except Boomer.