Lentil varieties

Michael Materne, Bruce Holding, Mirella Boddi, Sarah Meyer, Jason Brand, Nathan Neumann and Helen Richardson *(Pulse Breeding Australia, DPI Horsham)*

Take home messages

- *Ascochyta blight- and botrytis grey mould-resistant red lentil variety, Nipper, available for higher rainfall areas*
- *Green lentil, Boomer, available for farmers but must be harvested early to maximise yield and seed quality*
- *Good lentil management is beneficial in most years, irrespective of rainfall.*

Method

Yield experiments for lentisl were established across Victoria by Pulse Breeding Australia and the National Variety Testing program. All experiments were managed following recommended local practices. Yield data was statistically analysed and is only presented for trials with acceptable experimental error.

Results

There are limited trials for variety comparisons in 2008 due to high experimental error associated with drought. Aldinga was the highest yielding commercial variety, performing comparatively better than in previous years. The yields of Nipper and Northfield were relatively low, reflecting the lack of adaptation to dry springs.

Lentil production is limited by the lack of reliable varieties in dry years. Pulse Breeding Australia will release a range of lentil varieties in the next three years in partnership with PB Seeds to help restore confidence in growing lentils. These varieties are represented by lines listed in Table 1 and include early-maturing lines more suitable for crop topping (eg. CIPAL411 and CIPAL610), lines with early maturity and excellent harvestability (eg. CIPAL801 and CIPAL802), higher yielding mid-season maturity types (eg. CIPAL415, CIPAL501, CIPAL611) and the first Clearfield lentil (eg CIPAL702).

Table 1. Data from S3 and NVT experiments in 2008.

Location	Horsham	Minyip	Beulah	Kaniva
Nugget t/ha	**0.45**	**0.70**	**0.87**	**0.37**
Variety name	**% Nugget**	**% Nugget**	**% Nugget**	**% Nugget**
Aldinga	104	113	111	
Boomer	98	77	103	97
CIPAL411	116	113	109	168
CIPAL415	133	111	124	114
CIPAL501	147	129	123	119
CIPAL610	138	123	136	143
CIPAL611	129	116	140	159
CIPAL702	93	107	111	
CIPAL801	133	123	144	214
CIPAL802	120	149	130	176
Digger	107	107	94	100
Nipper	96	83	77	130
Northfield	80	83	84	124
Nugget	100	100	100	100
CV (%)	**11.7**	**10.9**	**11.4**	**11.2**
LSD (t/ha)	**24**	**23**	**23**	**18**
Environmental conditions	Low spring rainfall	Low spring rainfall	Low spring rainfall, stored soil moisture	Low spring rainfall, frost

Commercial practice

Nugget has been the highest yielding variety long-term in Victoria. Nipper has similar characteristics to Northfield but has resistance to ascochyta blight and botrytis grey mould. Nipper is best suited to the Wimmera where disease is more prevalent. Indications are that seed quality is favourable for a wide range of markets. The green lentil, Boomer, is a broadly adapted, vigorous, large-seeded green lentil that will offer the potential for Australia to develop a significant green lentil industry when prices for green lentils exceed that for red lentils. Its yield had been similar to current red lentil varieties. Harvest Boomer early to produce bright green seed and prevent shattering. Nipper and Boomer are available from AWB Seeds.

Management strategies developed over the last ten low rainfall years are also applicable to better years.

- Avoid poor soils (poorly structured soils, subsoils high in salinity and boron) and use good seed
- Know the best disease management strategy for your variety (lentil disease management guide, Pulse Australia website)
- Sowing early will maximise yield in most years but be aware of disease and lodging in years with average to above average rainfall. In general, sowing in mid-May in the Mallee through to mid-June in the more southern parts of the Wimmera is early enough to achieve most of the benefits of early sowing
- Increase stubble retention and reduce tillage where possible – good healthy soil structure is important for lentils

- Inter-row sowing can reduce soil disturbance, increase plant height and improve harvestability
- Plan for good weed management and avoid crop injury by applying herbicides as recommended, taking into account soil and climatic conditions
- Monitor and control insects during the season, particularly aphids (spread virus – also get seed tested for cucumber mosaic virus and alfalfa mosaic virus if virus was observed in the seed crop), Heliothis and Etiella
- Harvest lentils as early as possible without affecting quality (less of a problem in green lentils). Always be prepared for harvest to avoid rain or severe winds damaging mature crops
- Grow chickpeas if harvesting of lentils is considered too difficult or lentils too unreliable.