

Are Lentils An Option For The Central West?

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Overview:

Lentils are relatively drought tolerant and suited to the Central West. Correct paddock choice, disease and insect management and marketing skills are essential aspects of lentil growing. Paddocks must be flat with no rocks or sticks, freely draining, pH greater than 5.5 and be relatively free of broadleaf weeds. Insect management includes monitoring and spraying both seedling insects, such as red legged earth mite, and heliothis which damage the seed. Insect damaged seed is not tolerated in human consumption markets. Lentil variety trials commenced in southern and central NSW in 1999.

Lentils (*Lens culinaris*) are a low growing winter pulse crop producing a relatively small seed used as a valuable protein source for people in many countries. There are two main groups of lentil distinguished by their seed size and cotyledon colour. Green lentils have a green to brown seed coat with yellow cotyledons and are 6 to 9 mm diameter, or 4 to 7 g per 100 seeds. Seed size is important for green lentils with the optimal size being 7 to 8 mm. Red lentils have a pale grey or darker seed coat with red cotyledons and are 2 to 6 mm diameter, or 2 to 6 g per 100 seeds.

The lentil industry in Australia is relatively young, with most production in the Wimmera region in north west Victoria, some in South Australia, and an expanding area in southern Western Australia.

If paddocks can be selected to avoid the major stumbling blocks listed below, lentils could quite successfully be grown in many parts of the central west. In these lower rainfall environments they are less likely to be affected by fungal diseases which reduce yield and seed quality. In Australia lentils are generally grown

in areas with an annual rainfall of 375-600 mm but are relatively drought tolerant. In lower rainfall areas lentils are likely to yield between 0.75 and 1.5 t/ha however little or no trial data is available. Distance to markets and/or processing plants should also be considered when making the decision whether or not to grow lentils.

Major Stumbling Blocks!

- low soil pH - poor nodulation, growth and yield
- poor drainage - waterlogging and plant death
- high broad-leaf weed population - loss of yield
- disease - Ascochyta blight and grey mould - yield loss
- rocks and sticks damage header
- insect damage on seed - seed not accepted - price dockage
- cost of transporting lentils to processing plant/markets

Marketing Lentils

Growers intending to trial lentils should research markets thoroughly. The Lentil Company, based in Horsham, sells seed on a contracted buy back agreement which assists growers, especially those in more isolated areas. Prices are based on world prices and fluctuate significantly over time. Receival standards specifying minimum moisture content, size and purity must be met to maintain a high quality human consumption product.

Paddock Selection

Only grow lentils if the paddock: is very freely draining; has pH (CaCl₂) greater than 5.5; has no rocks on the surface; has a low broadleaf weed seedbank. Observe plant back recommendations for sulphonyl urea herbicides used in the previous two seasons, especially on higher pH soils.

Sowing

Sow in mid to late May targeting plants/m² 120 (70-100 kg/ha depending on variety). Sow 4-6cm deep (can be sown up to 8cm to reach moisture). Apply 15 - 20 kgP/ha. Inoculate with Group E inoculum (the same as for field peas). Roll after sowing or before 4 leaf stage if clods or stones are going to be a problem at harvest (the cutter bar will be on the ground).

Variety

There is limited comparative yield data for current varieties. Trials commenced in southern and central NSW in 1999 to assess lentil varieties. Select a variety looking at disease susceptibility, height, and ease of marketing.

Seed characteristics, disease reactions and agronomic characteristics of current lentil varieties. (source: Lentil growers guide: a guide for the production of lentils. JM Carter and MA Materne, Victorian Institute of Dryland Agriculture, Horsham, Vic)

Variety	Type	Ascochyta Foliage	Ascochyta Seed	Botrytis grey mould	Height	Lodging	Maturity	Weethalle Yield (t/ha)	Hillston Yield (t/ha)
Aldinga	Red	MR	MS	MS	Medium	MS	Medium	0.61	1.30
Ansak	Red	MR	MS	-	Medium	MS	Medium	0.89	1.29
Cassab	Red	MR	MS	MS	Medium	MR	Medium	1.09	1.34
Cobber	Red	MR	MS	MS	Medium	MR	Medium	1.09	1.26
Cumra	Red	MS	MS	S	Medium	R	Early	0.65	1.13
Digger	Red	MR	MS	MS	Medium	MR	Medium	1.23	1.56
Matilda	Green	MR	MS	MS	Medium	MR	Medium	0.31	1.35
Northfield	Red	MR	R	MS	Medium	MR	Medium	1.11	1.31

R = resistant, MR = moderately resistant, MS = moderately susceptible, S = susceptible

Seedling Insects

Monitor for insect presence and damage at establishment. Red legged earth mite, blue oat mite and lucerne flea all attack lentils.

Weed Management

Plan ahead. Control broadleaf weeds for at least 2 previous years. Use registered pre-emergent herbicide. Control grass weeds in-crop to optimise rotational benefits and lentil yield (they are poor competitors). See '*Weed control in winter crops*' for herbicide recommendations.

Diseases

Use disease free seed and don't grow lentils more than once in four years, or in paddocks adjacent to last years lentil stubble. There are no foliar fungicides. Avoid sowing too early, especially in higher rainfall areas. Choose varieties with some resistance.

Insects -Heliothis

Monitor for heliothis from flowering through pod fill. Human consumption grades do not tolerate insect damaged grain. Apply insecticide when an average of 5 or more grubs are found in 10 sweeps of a 38 cm sweep net.

Harvest, Storage and Handling

Lentils only grow 30-50 cm high, and settle prior to harvest. Consider an open front header with a flexible cutter bar. Harvest on time to obtain the best quality. Desiccation can be used to even up crop maturity and kill late weeds. Shattering can be minimised by harvesting early in the morning. Avoid damaging seed, especially with green lentils, by using slow drum speed and wide concave clearance. Be prepared to store lentils on-farm. Avoid over handling as augers damage seed, reducing quality.

Further Information

Lentil growers guide: a guide for the production of lentils. JM Carter and MA Materne, Victorian Institute of Dryland Agriculture, Horsham, Victoria.

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