

High Value Legumes (Lentils) for the Midlands Region



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Why look at Lentils

- We needed a high value legume to compliment and possibly substitute for lupins on certain soil types
- A legume is becoming required every 4-5 years on our sandplain soils and 6-10 years on better soil types
 - root disease, rotation break herbicides, maintain longterm profitability
- Wanted a legume that would provide enough ground cover over the summer months after harvest (with no grazing)
- Wanted a crop with large demand as a human food source to put a floor in prices and demand
- Wanted something that stores easily and for long periods like lupins

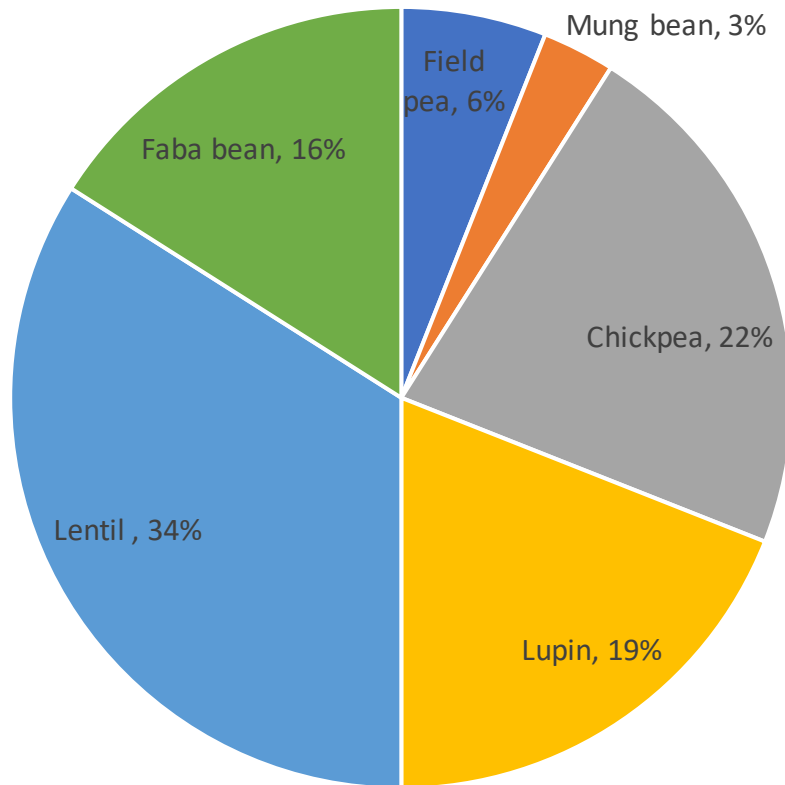
India at a Glance

- Population 1.437 billion (2024)
- Population below poverty line (2024) 0.234 billion (16.3%)
- Workforce in agriculture (2022-2023) 45.6%
- Average income per agricultural household (monthly) \$199.40 AUD
- Small and marginal operational holdings (<2 hectare) (2015-2016) 86.08%
- Indians living overseas – huge market worldwide

India at a Glance

- Lentils much smaller domestic production than Chickpeas (10-12 million tonne)
- Lentils typically 1.2-1.6 million tonne domestic production
- Lentil demand (India only) ranges between 2.5 – 3 million tonne
- Output fluctuates based on factors such as monsoon performance, cultivation area and ag practices
- Substantial imports required (Canada, Australia)
- Other markets include Bangladesh, Pakistan, Sri Lanka, UAE, Egypt

Australian Pulse production by type



% tonnes 3 year 2022-2024

Lentils

- Production grown from 200K tonnes 10 years ago to a peak of 1.7 m tonnes
- 90% of our crop exported
- 50% of exports to India
- 2024 record planting of 950K hectares
- 2024 crop affected by drought and frost yet still produced 1.1K tonnes
- Yield growth expected to continue

Why look at Lentils

	Beans	Peas	Lupins	Lentils	Chickpeas
Potential Price	Poor to Moderate	Moderate to Good	Poor to Moderate	Moderate to High	Moderate to High
Adaptability to soil type	Poor	Moderate	Good	Good	Poor
Wet tolerance	Good	Poor	Poor - Moderate	Poor	Poor
Harvestability	Good	Poor to moderate	Good	Poor to moderate	Moderate to Good
Stubble Cover (without Grazing)	Good	Poor	Moderate	Moderate	Poor
Storability	Poor (long term)	Good	Good	Good	Good

Lupin GM

GM Sensitivity		Cash Price \$/t				
Lupins		Poor	Below Average	Average	Above Average	Very Good
	Yield t/ha	300	350	400	450	500
Poor	1	-\$211	-\$161	-\$111	-\$61	-\$11
Below Average	1.5	-\$61	\$14	\$89	\$164	\$239
Average	2	\$89	\$189	\$289	\$389	\$489
Above Average	2.5	\$239	\$364	\$489	\$614	\$739
Very Good	3	\$389	\$539	\$689	\$839	\$989

Assuming \$511/ha Variable Costs including operations

Lentil GM

GM Sensitivity		Cash Price \$/t				
IMI Tolerant Lentils		Poor	Below Average	Average	Above Average	Very Good
	Yield t/ha	500	600	700	800	900
Poor	0.8	-\$135	-\$55	\$25	\$105	\$185
Below Average	1	-\$35	\$65	\$165	\$265	\$365
Average	1.5	\$215	\$365	\$515	\$665	\$815
Above Average	2	\$465	\$665	\$865	\$1065	\$1265
Very Good	2.5	\$715	\$965	\$1215	\$1465	\$1715

Assuming \$535/ha Variable Costs including operations

Piawaning NGN site 2025

Crop	Sowing Rate (kg/ha)	Yield t/ha
Fieldpea	80	3.56
	100	3.35
	120	3.90
Lupin	80	2.09
	100	2.21
	120	2.28
Chickpea	80	1.37
	100	1.55
	120	1.51
Lentil	30	2.06
	40	2.07
	50	2.06

Rowes Rd NGN site 2026

Crop	Sowing Rate (kg/ha)	Yield t/ha
Fieldpea	80	2.09
	100	2.24
	120	2.34
Lupin	80	3.18
	100	2.84
	120	2.90
Chickpea	80	0.59
	100	0.68
	120	0.71
Lentil	30	0.90
	40	0.88
	50	0.92

Lupins vs Lentils

How did they go – commercial scale??

- 2024 Lupins 2.7 t/ha (\$500/t) Lentils 1.5 t/ha (\$850/t)
- 2025 Lupins 3.1 t/ha (\$350/t) Lentils 1.4 t/ha (\$650/t) (lontrel, carryover, delayed harvest)
- Commercial lentil crops ranged from 1.4 – 2.1 t/ha across central and northern area of WA in 2025 (approx. 3000ha)
- Area has grown in 2026 to approx. 8-10000 ha through the middle to northern part of wheatbelt



Paddock Selection

- Free draining with little or no waterlogging
- Topography – relatively flat to gently undulating
- Rocks – pick paddocks where they are easily managed
- Amount of soil amelioration over last 15-20 years has led to lentils now being a viable crop
- pH a major constraint – target 5.5-6 or greater (0-10cm)
- Target pH 5 or greater through complete subsoil pH profile
- Soil compaction is also a major constraint so large responses to deep ripping in the year prior (0.35 – 0.7 t/ha) have been possible
- Try and retain last years stubble if possible – moisture retention, wind protection, trellising
- **More adaptable than we think**

Waterlogging and drainage



Herbicide carryover



Lontrel 50 g/ha 11 months prior, 280 mm post application

Sowing

- Sow late April – early May. (Early June is also an option)
 - Biomass accumulation aids in harvest but watch disease
- Target 120-150 plants m². Greater plant numbers than this don't increase yield but do improve stand density
- Sands 40-50kg/ha
- Good loams/clays 30-40 kg/ha
- Can be sown later i.e. early June with good yield outcomes
- Spring rainfall drives yield
 - More spring rain = higher yield
- Can sow deep – 40-50 mm. Germinate easily
- 10 inch row spacing ideal -IBS chemical safety, Inter-row trellis, cover

Lentil TOS 2020-2022 Esperance

Year	Sowing Date	Burdett (CIPAL1701)	PBA Bolt	PBA Hallmark XT
2020	28 April	2.0	1.7	0.8
	12 May	2.9	2.1	1.8
	2 June	3.1	2.8	2.8
2021	1 April	2.3	1.7	1.4
	15 April	2.0	1.9	1.9
	14 May	2.0	2.2	2.0
	8 June	1.8	1.8	1.7
2022	12 April	1.8	0.8	1.2
	2 May	1.9	1.4	1.3
	18 May	2.2	1.9	2.0
	31 May	2.4	2.3	2.1

Inoculation



Lentils Group E
Lupins Group G

- No background rhizobium in our soils

Over inoculate!!

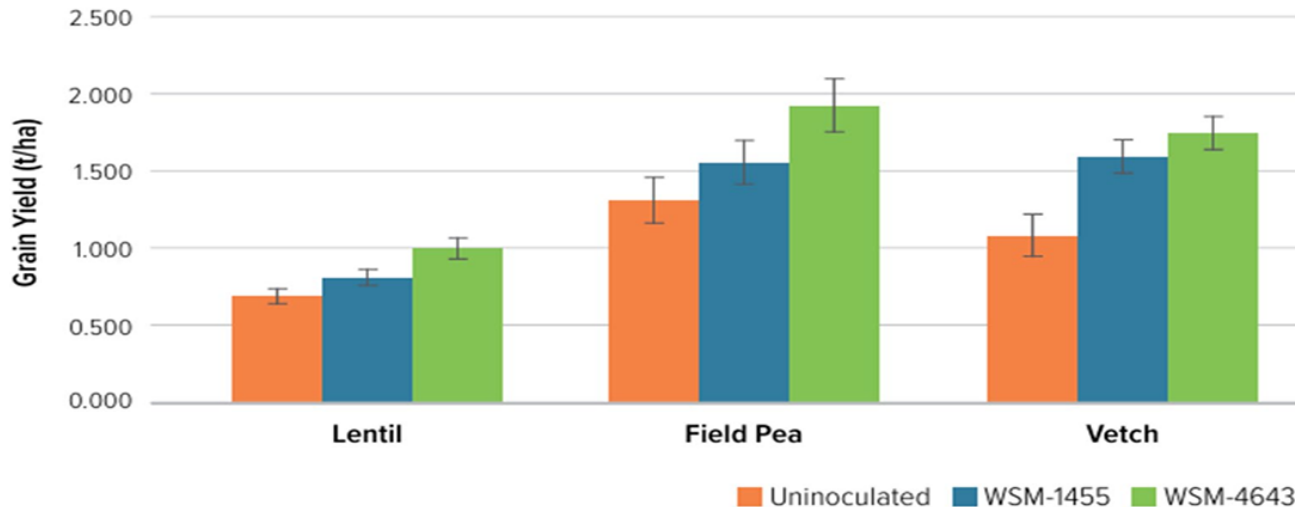


Inoculation

Acid Tolerant Rhizobia:

Acid soils delay and limit nodulation and hence reduce yields. They can also cause growth and yield variation within a paddock. Use x 2 inoculation rates if $\text{pH} < 5$.

In multiple GRDC trials on acid soils, the new Group E rhizobia strain averaged a 30% increase in nodulation and 15% in N fixation.



Nutrition

- Currently treating very similar to our lupin package BUT
- Early indications are that they are more responsive to Phosphorus
- Responsive to K in deficient soils
- Some responses to Sulphur on lighter soil types
- Zinc (at early flowering can be important) but not seeming much in strip trials at the moment to it or other micro- nutrients

Rolling

- Steel Rollers ONLY
- Roll when they are about 3-5cm taller than the furrow (5- 7 node stage)
- Big enough to handle chemical residues pushed into trench
- Minimises damage from roller
- Don't roll immediately following a frost
- Don't roll reflex treated paddocks until post emergent
- Roll 10 days before or 4 days after chemical application



Rolling



- Flattens clods and ridges caused by press-wheels
- Presses rocks and sticks in
- Reduces harvest losses, header wear and sample contamination

Weed Control

- Get a good knockdown if possible
- Select paddocks with lower broadleaf weed levels
 - radish, capeweed, vol canola are main enemies
- Can use reflex IBS but limit your rates and get good chemical separation
- Brodal EPE keep rates down 100-150 ml/ha
- Grasses – can be very robust
 - have been treating similar to lupins

Lentil Disease

- Don't be complacent – actively manage like any other crop but proactive is best!!
- Botrytis grey mould (BGM) – its here don't ignore
- Ascochyta
- Sclerotinia- our biggest threat!



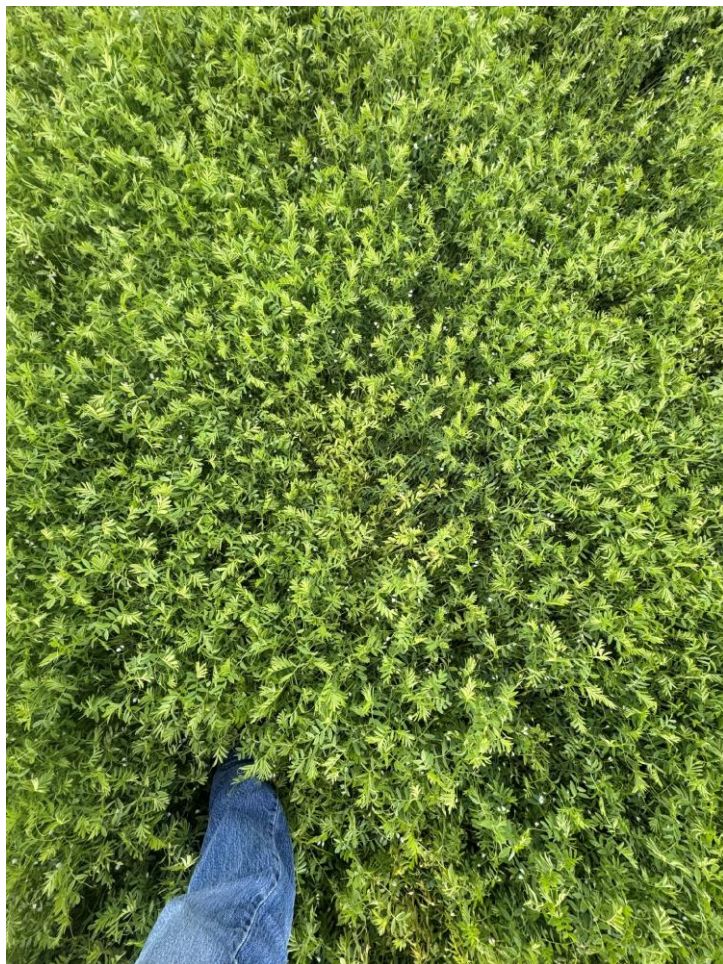
Lentil Disease



- Fire best shot first – first fungicide just prior to canopy closure
- Second fungicide at flowering – monitor weather conditions
- We are going to have much bigger problems with Scerotinia than SA, Vic



Sclerotinia



Dessication

6/10/25



15/10/25





Harvest



- Dessicate and harvest ASAP
- Easy to thresh
- Flex Fronts (ideal world)
- Duck feet on reel
- Air Reel in an ideal world
- Blow down regularly – increased fire risk
- On farm storage



Harvest



- Harvest 14% Moisture
- 4% Total defective (wrinkled, poor seed colour, insect damage)
- Low tolerance to weed seeds (grade if required)
- Very heavy 0.8-0.85 HL

