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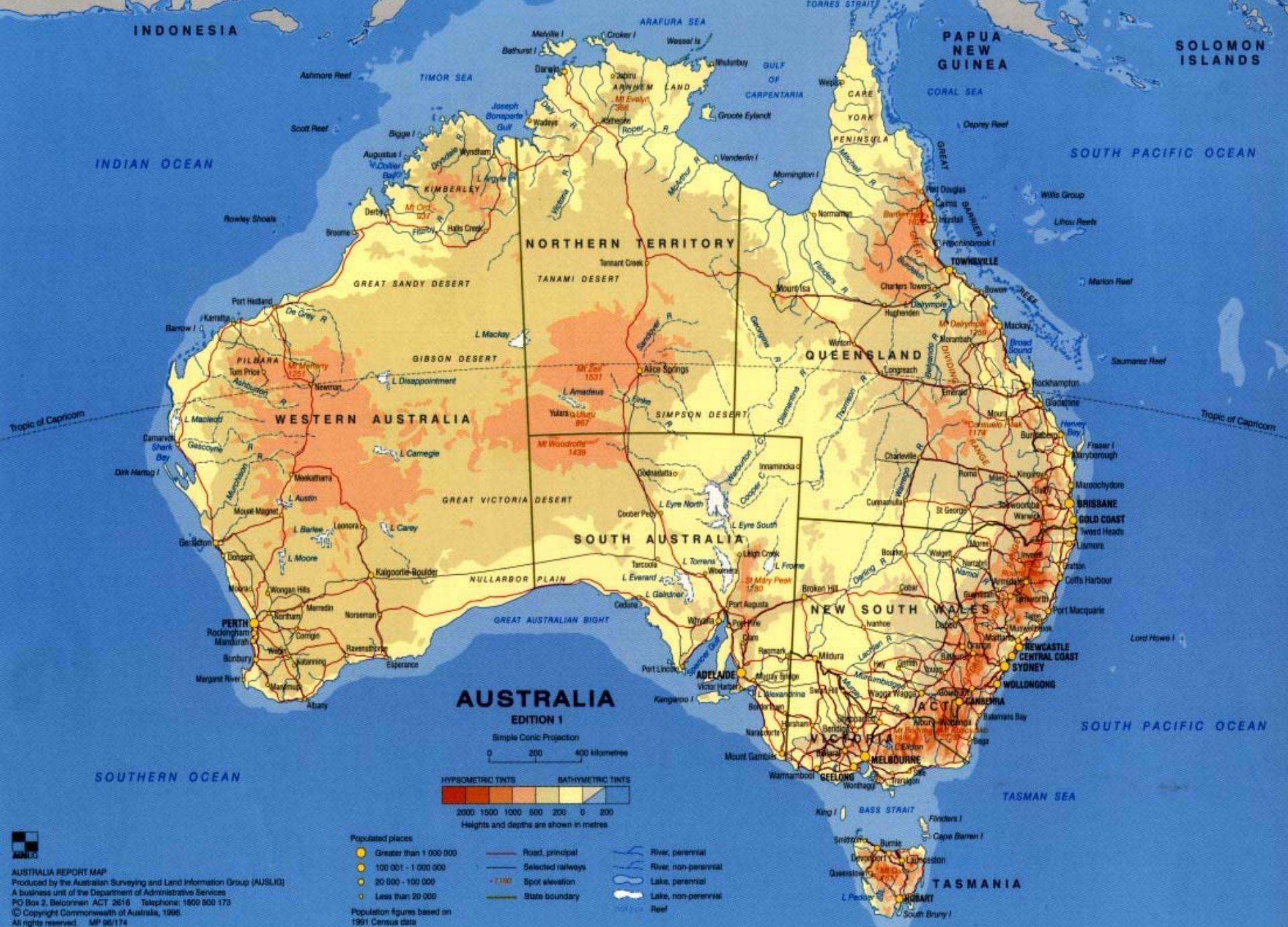


# Successful Lupin Establishment in Western Australia - A Review

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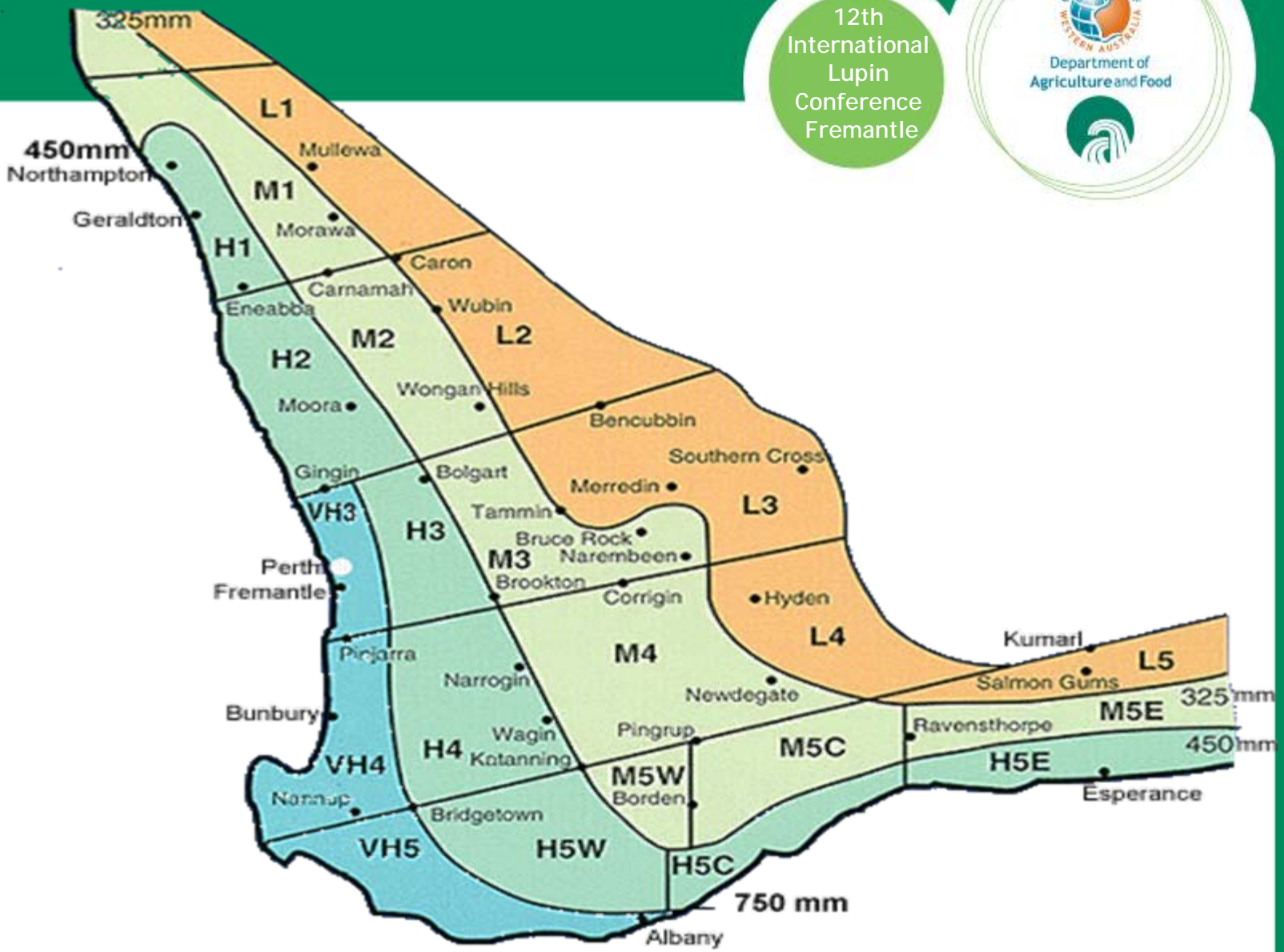
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**AUSTRALIA REPORT MAP**  
Produced by the Australian Surveying and Land Information Group (AUSLIG)  
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Lupin establishment has been relatively poor in the past due to factors such as

1. low seedbed moisture
2. poor seed depth control
3. lack of seed drill stubble handling ability
4. poor pre-emergent chemical weed control and
5. Unsuitable machinery





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This paper aims to show the steps that have been found that lead to successful lupin field establishment.



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1. Seed quality
2. Stubble retention
3. Fertiliser placement away from the seed
4. Press wheels
5. Loose soil above the seed.



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## Seed Quality

- Harvest with drum peripheral speed less than 12 metres per second  
(Blanchard 1990)
- Grade seed to larger than 145 mg  
(McCarthy and Delane (1992)  
(my experience is 6 mm round hole screen or 5 mm slot screen)
- Lab germination greater than 80%



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- Cucumber mosaic virus less than 0.5%  
(Bwye et al. 1994)
- Seed phosphorus greater than 0.25%  
(Bolland et al. 1989)
- Seed manganese greater than 13 mg/kg  
(Brennan and Longnecker, 2001)
- Treat seed with suitable fungicide



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## Stubble retention

- Reduces Brown Spot spore splash by rain
- Reduces the risk of wind erosion and seedling damage
- Reduces aphid landing
- May have to be cut short for tine seed drills



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## Fertiliser placement

- Below seed reduces toxicity, particularly in drying soils
- No more than 16 kg phosphorus/ha with the seed in 18 cm wide rows
- On poor P soils, below the seed is best



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## Press wheels

- Improves seed/soil contact for better moisture migration to the seed.
- Leaves a water harvesting "V" above the seed, which is important for non-wetting sands and low rainfall regions.



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## Loose soil above the seed

- Reduces soil seed zone drying rate.
- Easier for cotyledons to emerge than deep pressed soil.
- Less in-row ryegrass established  
(Amjad and Riethmuller 2001)



Rotary harrow

Ring harrow





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**Press wheels plus  
loose soil above seed**

**Press wheels**



**Average 5 ryegrass heads/m<sup>2</sup>**

**Average 12 ryegrass heads/m<sup>2</sup>**



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## Conclusions

Lupin establishment has been improved in Western Australia by attention to seed quality, stubble retention, careful fertiliser placement, use of press wheels and loose soil above the seed.



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# THANK YOU