# Getting legumes into pastures

Pasture legumes can improve the productivity of grass–pastures, but they can be difficult to establish and maintain in a pasture.

# Why should legumes be introduced?

* Increase weight gain (kg/beast / kg/ha): can add an extra 30–60 kg/beast/yr.
* Contribute nitrogen to the soil: grass quality is increased.
* Produce higher quality feed when grasses are mature, particularly in autumn/winter.

## Pasture rundown

* Nitrogen is ‘tied–up’ in forms unavailable to plants – reduces grass growth and animal growth rates performance.
* Different to rundown of cropping soils, where nutrients are removed.
* To overcome, grass material (litter, root mass) needs to be decomposed, or plant legumes to increase nitrogen supply.

## How to establish legumes?

A number of options are available, but the best results are obtained from direct seed–soil contact and reducing/eliminating grass competition.

1. Broadcast onto surface:

* Primarily successful for Stylos, but might be possible for other legumes (e.g. burgundy bean).
* Easy but risky option as relies heavily on follow–up rainfall for success.

2. Bandseeding:

* Plant seeds with zero till type tynes followed by presswheels. Follow–up with a band of herbicide such as glyphosate to minimise grass competition.
* Higher establishment potential as seed is in direct contact with soil, and competition (grass) has been suppressed.

3. Zero till:

* Spray out all grass after first or second rainfall event in spring
* Once 30–45 cm of moisture stored, plant seed into moisture followed by presswheels with a zero till planter
* Higher cost but significantly higher success rate. Grasses will self–regenerate.

4. Minimum disturbance tillage:

* Single pass with offset discs, chisel plough or crocodile planter to create soil roughness and let moisture in.
* Success will depend on the amount of grass removed and follow–up rainfall.

5. Full disturbance tillage:

* Fully cultivate with discs or chisel plough to provide seedbed.
* Store moisture and plant seed in ground with combine/airseeder, or surface application with drumseeder and tyre roller.
* Good option if a zero till planter is not available.



## Pasture legumes suitable for Central Queensland conditions:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Land type** | **Seca Stylo** | **Caatinga stylo** | **Leucaena** | **Butterfly pea** | **Burgundy bean** | **Siratro** | **Desmanthus** | **Lucerne** |
| Brigalow  - softwood scrub  - grey/yellow clays  - melonhole clay  - Blackbutt duplex | ✓✓  🗶  🗶  ✓✓ | ✓✓  ✓✓  ✓✓  ✓ | ✓✓  🗶  🗶  ✓ | ✓✓  ✓  ✓  ✓ | ✓✓  ✓  ✓  ✓ | ✓✓  ✓  ✓  ✓ | ✓✓  ✓✓  ✓✓  ✓ | ✓  ✓  ✓  ✓ |
| Open downs  - grassland black clay  - woodland shallow clay | 🗶  🗶 | ✓✓  ✓ | ✓✓  ✓ | ✓✓  ✓ | ✓✓  ✓ | ✓  ✓ | ✓✓  ✓ | ✓  ✓  🗶 |
| Alluvial flats  - heavy clay (e.g. Coolibah)  - Loam (e.g. Bluegum) | 🗶  ✓ | ✓✓  ✓ | ✓  ✓✓ | ✓✓  ✓✓ | ✓✓  ✓✓ | 🗶  ✓✓ | ✓✓  ✓✓ | ✓  ✓✓ |
| Forest  - Eucalypt woodlands | ✓✓ | ✓ | 🗶 | 🗶 | 🗶 | 🗶 | ✓ | 🗶 |

✓✓ Suited

✓ Will grow, but difficult to establish or persistence poor.

🗶 Unsuited

## Further information

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