Selecting Species for Profit

The Herbage Development Program

The *Tasmanian Institute of Agriculture's* (TIA's) *Herbage Development Program* is focused on delivering persistent, high-yielding and nutritious pasture cultivars, developed and tested here in Tasmania. The result is a range of perennial grasses as well as annual and perennial legumes well suited to Tasmanian farms that boost productivity and profitability.

Seed is now available through seed suppliers. For further details, email: TIA.HDP@utas.edu.au

Importance of New Pastures

New pastures are an important tool for increasing farm productivity. Not only can new pastures support higher stocking rates, but can provide insurance when times get tough through improved persistence and dry matter production compared to older pasture varieties.

To get the best from any new pastures, appropriate species and cultivar selection is critical.

Which Plant is Best?

To select the best species and/or cultivar that best suits your property, consider the following suitability factors:

- What is the paddock environment?
  - Are the soils acidic, wet etc.?
  - Dry-land or irrigation?
  - Annual or perennial species?
- What is the purpose of the pasture?
  - Sheep, cattle or other?
  - Short or long term pasture?
  - Fattening stock or winter production?

Preparation is the Key to Success

Planning is the key to the success of any new permanent pasture. Prior to any cultivar selection, get to know your paddock. Have you done a soil test recently? Do you know what soil types are within the paddock? The more you know, the more informed decisions you can make about selecting species most suitable to your property.

This information will help you select which pasture species are going to suit your soil environment as each species suit different environments. Selecting the right plant for the right environment and place is essential. Below (see table 1) is a helpful tool to assist with species selection for various conditions.

Be mindful of your grazing system or animals, with some cultivars better suited to cattle vs. sheep, but also consider if you are wishing to use the pasture for hay or silage production. A good example of this would be Lucerne.

Knowing the purpose of the plant is very important, what are you hoping to achieve? Do you want something short term for fattening stock, permanent pastures or as a crop for fodder conservation? These decisions will help you decide between an annual (survives for 1 year), biennial or short-term (survives for 2-3 years) or perennial (permanent) species. Short-term species could be better suited to high-intensity cropping rotations.

Strongly consider a legume, as they are beneficial for grazing stock, but also provide valuable nitrogen to the soil, which in turn provides better growth of your grasses.

Selecting the *right plant for the right purpose and the right place* is the key to success!

Table 1.: Perennial pasture grass and legume species attribute comparison table.

*Minimum rainfall**	*250 mm/yr*						*400 mm*								*700+ mm*
Species/ Attribute	Cocksfoot (summer dormant: e.g. Uplands[(b)])	Caucasian Clover (e.g.: Kuratas[(b)])	Hybrid Lucerne (e.g.: KI Creepa[(b)])	Lucerne	Phalaris	Tall Fescue (winter active /summer dormant)	Cocksfoot (summer active: e.g.: Megatas[(b)])	Tall Fescue (winter dormant/summer active)	Strawberry Clover	Red Clover (Stoloniferous e.g. Rubitas[(b)])	Coloured brome (e.g.: Exceltas[(b)])	Annual ryegrass	Perennial ryegrass	Red Clover (Short lived)	White Clover
Ease of establishment															
Tolerance to highly acidic soils (<pH5)															
Tolerance to sandy soils															
Water logging tolerance															
Irrigation Suitability															
Drought Tolerance															

Key: Poor | Fair | Good | Very Good | Excellent

**Rainfall is only an approximate guide and is the minimum of a rainfall tolerance range.*

Species for Profit

Alternative pasture species from the *Herbage Development Program* at the *Tasmanian Institute of Agriculture* (TIA) are great as companions to traditional pasture species, as a seed crop, or simply better adapted to difficult environments. Benefits of including these alternatives in your pasture can include improved persistence, all-year round growth and greater animal production. Some new cultivars from the program are outlined below.

Rubitas$^{\Phi}$ (Red Clover)

This is a very long-lived perennial that's suitable for all Tasmanian environments. Being stoloniferous, it is competitive with many other pasture species and can compete very well in intense dairy pastures, but is also very tolerant of close grazing by sheep. Persistence is ensured in dry periods with a strong, deep and extensively branched taproot. Like other red clovers, growth is predominately in spring and summer.

Quick facts: Rubitas$^{\Phi}$

Suited to:	Dryland or irrigation
Stock:	Cattle or sheep
Grazing management:	Set stocking or rotational grazing systems
Cold tolerance	Frost tolerant to -9 °c
Sowing time:	Spring and autumn
Sowing depth:	5 mm
Sowing rate:	3-6 kg/ha
Sowing method:	Cultivated firm seedbed for best results, direct drilling or broadcast onto a weed-free and clean bed. Seed will need to be scarified and inoculated prior to sowing.
Anti-quality factors:	Potential risk of bloat in pure stands. Has a low level of phytoestrogen
Key features:	Competes well against and compliments vigorous grasses e.g.: ryegrass

Uplands$^{\Phi}$ (Hispanic Cocksfoot)

Uplands$^{\Phi}$ is a Hispanic or Spanish Cocksfoot. This selection makes Uplands$^{\Phi}$ extremely drought tolerant (via summer dormancy), highly autumn and winter active, finer leaved and more densely tillered compared to traditional continental Cocksfoots. It is highly digestible and nutritional for grazing stock. Uplands$^{\Phi}$ is a good companion species when sown in a pasture mix with Tall Fescue, Phalaris, Rubitas$^{\Phi}$ Red Clover, Talish Clover or Caucasian Clover and also has very good frost tolerance.

Quick facts: Uplands$^{\Phi}$

Suited to:	Dry land
Stock:	Cattle or sheep
Grazing management:	Set stocking or rotational grazing systems
Cold tolerance	Frost tolerant to -9 °c
Sowing time:	Spring or autumn
Sowing depth:	Do not sow more than 10 mm deep (best at ~ 5 mm).
Sowing rate:	2-5 kg/ha
Sowing method:	Cultivated firm seedbed for best results, direct drilling or broadcast onto a weed-free and clean bed.
Anti-quality factors:	Non applicable
Key features:	Higher pest tolerance compared to ryegrass High winter activity and drought tolerance

Exceltas$^{\Phi}$ (Coloured Brome)

Exceltas$^{\Phi}$ is a summer active, high-yielding, long-lived perennial grass with excellent late-spring/early-summer growth. It is tolerant of high summer temperatures with good drought tolerance. It is ideally suited to well-drained soils with good fertility, and summer rainfall or irrigation. It remains palatable even during seed set, has lower dag scores and can out-yield perennial ryegrass as well as being compatible with legumes. This is a great alternative to ryegrass.

Quick facts: Exceltas$^{\Phi}$

Suited to:	Dryland or irrigation
Stock:	Cattle or sheep
Grazing management:	Rotational grazing system (best) but can tolerate regular grazing
Cold tolerance	Frost tolerant to -3 °c
Sowing time:	Spring and autumn
Sowing depth:	10 mm
Sowing rate:	15-25 kg/ha depending on seed bed quality
Sowing method:	Cultivated firm seedbed for best results, direct drilling or broadcast onto a weed-free and clean bed.
Anti-quality factors:	Non applicable
Pest resistance:	Resistant to pasture grub Susceptible to Lucerne flea until established

Want to Know More?

For more information on alternative pasture species, including Arrowleaf Clover, variegated Lucerne, Caucasian Clover, Alsike Clover or Talish Clover – including where to source seed – please email: TIA.HDP@utas.edu.au