
PASTURE LEGUMES

White clover (*Trifolium repens*)

Perennial. 625 + mm rainfall or irrigation. Will grow over a wide range of soil types and fertility levels. Capable of very high production (mainly spring-summer-autumn) if fertility is high and adequate moisture is available. Poor drought resistance; minimal productivity during dry summer period. Use inoculant Group B.

Grasslands Kopu	2-4kg/ha	A large leaved, open and upright white clover ideally suited to areas of high fertility and rainfall. Specially bred for rotationally grazed cattle pastures and has better production and persistence than Grasslands Pitau. Performance is reduced under set stocking. Long growing season and has performed very well in Tasmanian merit testing.
Grasslands Pitau	2-4kg/ha	A larger leaved cultivar than Huia with superior winter production. Under set-stocking, as persistent as Huia but inferior in production in summer. More persistent than Haifa.
Grassland Tahora	2-4kg/ha	A small leaved cultivar with a high density of fine stolons most of which are close to the soil and cannot be grazed. Developed for set stocked sheep pastures it is very persistent and more productive than Grasslands Huia. Has proved to be very drought tolerant in Victoria and has performed well in high rainfall merit testing in Tasmania.
Grasslands Demand	2-4kg/ha	Medium to large leaf size and an intermediate plant habit making it highly suitable for inclusion in pasture mixes for use on dairy and improved sheep/beef operations under irrigated or dryland conditions. Medium to high stolon density and height.
<i>Provisionally Approved</i>		
Aran	2-4kg/ha	Large leaf, erect growth habit, good spring/summer production.
Prop	2-4kg/ha	Small leaf, high stolon density, prostrate growth habit.
Grasslands Prestige	2-4kg/ha	Medium size leaf, good cool season growth, high stolon density.
Grasslands Challenge	2-4kg/ha	Medium to large leaf, good cool season growth, medium to high stolon density.

Outclassed: Grasslands Huia, Haifa

Red clover (*Trifolium pratense*)

For providing extra feed in late spring and summer in well-drained soils in high rainfall areas, in irrigated pastures or on naturally summer-moist soils. Also useful in short leys. May be sown in pure swards as a specialist hay or silage crop or for grazing. Rotational grazing will promote plant longevity and persistence. Most cultivars do not persist beyond 2 to 4 years. Some cultivars contain phyto-oestrogens which may reduce fertility of stock grazed on green feed at mating.. Use inoculant Group B.

Grasslands Colenso	5-7kg/ha	Has better winter production, is longer lived and more productive than Grasslands Hamua. Merit test projects indicate that it will be more persistent than most other cultivars. Persistence in excess of 5 years in Tasmania is yet to be proved. Suitable for well drained soils in areas with medium to high rainfall or irrigation. Medium phyto-oestrogen content.
Grasslands Hamua	5-7kg/ha	Suitable for general pasture use, being more persistent than Redquin. High phyto-oestrogen content and less productive than most other cultivars.
Astred	5-7kg/ha	Has a low crown, a stoloniferous growth habit and the ability to reproduce vegetatively making it potentially the most persistent of all red clovers. Winter production similar to Grasslands Colenso; production after 3 to 5 years greater to date than for most other red clovers because of superior persistence. Can be sown as a pure sward for hay/silage or for grazing. Ideal for inclusion in pasture mixtures because of its prostrate growth habit and grazing tolerance. Requires well drained soils. Very low levels of phyto-oestrogens so should not affect livestock.

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Pac19	5-7kg/ha	Large leafed, soft stemmed, good mid summer production. More persistent and productive than Redquin.
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Outclassed: Redquin

Strawberry clover (*Trifolium fragiferum*)

A long lived perennial clover that grows during spring/summer/autumn; almost no winter growth. Tolerates both drought and waterlogging and is suitable for poorly drained, moderately alkaline and/or saline soils. Use inoculant Group B.

Palestine

2kg/ha

The only strawberry clover approved for use in pastures. Relatively slow to establish, sow in early autumn or spring to ensure fastest rates of establishment.

Once established is aggressive and very persistent; a good partner for grasses such as tall fescue. Suitable for soils which can become waterlogged and/or which contain low levels of salt. More salt tolerant than white, subterranean and most other clovers. Only perennial clover available as a partner for tall fescue in low salt content soils.

Shaftal (Persian) Clover (*Trifolium resupinatum*)

An annual clover suitable for 650 + mm rainfall areas. A useful one-year forage crop or as a partner with short lived ryegrass. If sown early (February/March) with irrigation, or after good autumn rain, very high levels of autumn/early winter production can be expected as well as good spring/early summer growth. Use inoculant Group O.

Maral

8kg/ha

Good feeding value as hay, pasture or standing hay; has very high nutritive value. Good regrowth after grazing. Grows on moderately acid to alkaline soils; tolerates moderate salinity and waterlogging. Poor regeneration from seed as this is a soft seeded cultivar.

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Kyambro

8kg/ha

Kyambro is different to other Persian clovers: it is best suited to heavy alkaline soils receiving 550mm or more annual rainfall, it produces a high proportion of hard seeds that enables good persistence, it is more prostrate and produces fewer stems, smaller leaves and many lateral shoots, it is best suited to set stocking, except during flowering, and provides good grazing during summer.

Serradella (*Ornithopus* spp)

There are two species of serradella, *Ornithopus compressus* (yellow serradella) and *O. sativus* (pink serradella). The first is characterised by having a very high percentage of hard seeds, prostrate growth habit and yellow flowers, the second being relatively soft seeded with an erect growth habit and pink flowers. Both are annuals that germinate in autumn/early winter and produce during winter, spring and early summer. Serradella is adapted to well drained sandy soils with lower pH and often fertility, particularly phosphorous levels. It will also tolerate moderate to severe aluminium and manganese levels both of which are toxic to, and reduce the productivity and persistence of, other herbage legumes such as white and sub clover and lucerne. Serradella has a deep root system that allows it to continue growing actively during dry early mid summer periods after other annual legumes have finished their growth cycle; regenerates readily from seed each autumn. Soft seeded cultivars most suited to Tasmania. Ideally include equal quantities of seed of both species in sowing mixtures; pink serradella will dominate for 2-3 years and then decline in incidence to be replaced by the yellow serradella as its seeds soften and germinate. All Serradellas are non-bloating and contain condensed tannins which protect protein in the rumen thereby increasing protein absorption and digestive efficiency in ruminants. Use inoculant Group S.

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Avila (Yellow Serradella)	10-15kg/ha	Hard seeded, very persistent. Maximum production after 2-3 years when hard seeds soften and germinate. Prostrate habit.
Grasslands		
Koha (Pink Serradella)	10-15kg/ha	Higher level of soft seeds, likely to be less persistent over time. Erect habit.
Spectra (Hybrid)	10-15kg/ha	Moderate level of hard seeds. Persistent when seed levels build up in soil. Semi prostrate habit.

Subterranean clover (*Trifolium subterraneum*)

In addition to white clover, the most widely used clover in Tasmania. Annual, self reseeding clovers with cultivars suitable for sowing in all rainfall areas of Tasmania. Productive from autumn to early summer depending on time of flowering. Drought tolerant through its annual habit. Seedlings are very susceptible to red legged earth mite and lucerne flea and established plants can be severely damaged in spring. Wide range of maturities between cultivars allowing mixtures to be chosen that will give production from autumn to early summer: dates at which flowering normally begins for each cultivar are shown in brackets. Yanninicum type sub clovers are now available which have larger light coloured (cream/amber) seeds in addition to the usual black seeded cultivars. Inoculate with Group C inoculum. Consult DPIF "Subterranean clover - Technical guide for Tasmania" for details of suggested cultivar mixtures for different soil types and rainfall zones.

Early maturing

Enfield	6-8kg/ha	(Late September). Replacement for Wootenellup on light well-drained soils. Very high production of small, readily softened seeds make it often the best autumn-winter producer on these soils. Black seeds.
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Esperance	6-8kg/ha	(Late September). Replacement for Woogenellup on light well drained soils. Early production similar to Trikkala and main attribute is very high seed yield. Best cultivar where "burr" feed is a priority. Black seeds.
Trikkala	8-10kg/ha	Flowering commences around mid September. Yanninicum Type. Best early cultivar on heavy black or poorly drained soils. Also reasonable performance on lighter, better drained soils. Light coloured seeds.
<i>Late maturing</i>		
Denmark	6-8kg/ha	(Mid October). Newly released cultivar well adapted to most soils and environments in Tasmania. Highly productive from autumn to late spring being the best all-round cultivar so far evaluated for Tasmanian conditions. Autumn-Winter production capable of exceeding Enfield. Low, dense habit is suited to frequent grazing. Less vigorous and productive if allowed to be shaded by grasses. Could be sown alone but until more experience and results of trials are obtained will be best sown in mixture with Karridale or Leura. Black seeds. Principal cultivar for low rainfall areas.
Gosse	8-10kg/ha	(Early October). Yanninicum Type. Maturity and dry matter production midway between Trikkala and Larisa. A useful cultivar but no perceived advantage over a 1:1 Trikkala/Larisa mixture for heavy black or poorly drained soils. It may be included only as a supplementary cultivar on these soils. Light coloured seeds.
Goulburn	6-8kg/ha	(Early October). Newly released cultivar of moderate performance in Tasmania but has persisted and out-produced all other commercial cultivars in a trial sited on light soil on Flinders Island. Showing some early promise on a red soil site in a higher rainfall area of the North West Coast. Black seeds.
Karridale	6-8kg/ha	(Early October). Highly productive, long growing season replacement for Mt Barker. Good all round performer on all but black, heavy, poorly drained soil types where Yanninicum are the best performers. Strong seedling vigour and reliable in both good and poor seasons. Reasonable early production but best sown in mixture with an early cultivar. Suggested that 2-3kg/ha of Enfield, Esperance or Trikkala be sown with Karridale. Black seeds.

Larisa	8-10kg/ha	(Mid October). Yanninicum type. Only approved for heavy black or poorly drained soils. Poor early growth but very good mid to late spring production and with rains will continue well into late December. Complements Trikkala as the best cultivar for heavy black or poorly drained soils. Light coloured seeds.
Leura	6-8kg/ha	(Late October). Newly released cultivar also well adapted to most soils and environments in Tasmania. Early production less than Denmark and comparable to Karridale. Excellent spring production and like Larisa can grow into late December with favourable rain. Should be sown in mixture with Denmark or Karridale. Susceptible to clover scorch and should not be used where this disease has been recorded. Black seeds. Principal cultivar in medium to high rainfall areas.

Outclassed: Woogenellup, Mt Barker

Trefoils (*Lotus* spp.)

Big Trefoil (Greater Birdsfoot trefoil) (*Lotus uliginosus*)

Used as a fodder plant for dairy cows, as well as for sheep and general grazing purposes. Lotus is a valuable legume, not only for damp, marshy ground and drained swamps, but also for dry situations. It does well on widely varying classes of soil, from stiff clay to sandy loam. The plant is a true perennial, and readily adapts itself to different types of land. When cut just as the plant coming into bloom, it makes first class hay of excellent quality. It is particularly palatable to stock, except when it is in flower. Non bloating and contains condensed tannins which protects protein in the rumen from degradation thereby increasing protein absorption and digestive efficiency in ruminants. Sow the seed in the autumn.

Grasslands Maku	3kg/ha	Potentially useful for low fertility acid soils and wet, shady situations. Light, rotational grazing is essential if it is to persist. Non-bloating Low phosphate requirement. Normally sown on its own. Use inoculant Group D.
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Birdsfoot Trefoil (*Lotus corniculatus*)

A perennial, tap rooted plant that forms crowns and depends on crown survival for persistence; drought tolerant; tolerates lower fertility and pH (as low as pH5), has better waterlogging tolerance and will grow over a broader range of conditions than lucerne and red clover. Manage similarly to lucerne. Do not graze until fully established; preferably allow to grow until flowering before first grazing. Highly palatable and nutritious and contains condensed tannins that enhance protein digestion, uptake and utilisation by ruminants; has proven anthelmintic effects in sheep and is non bloating. Must be inoculated with higher than normal rates of Rhizobium (Group D) inoculum to ensure successful nodulation, or preferably with the specific Birdsfoot Trefoil inoculum that is available..

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Grasslands Goldie	3kg/ha	Sow in spring in Tasmania. Good persistence, drought tolerant, good production in spring to autumn if soil moisture adequate.
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Lucerne (*Medicago sativa*)

Active growth during spring, summer and autumn with winter growth varying between cultivars. Normally very persistent and productive as a hay crop, providing some winter and early spring grazing as well. Best production is under irrigation and on deep well drained soils of pH 5.7 or higher. Very drought tolerant. Normally sown on its own as a pure stand for hay or grazing; persists only if mown or rotationally grazed. Use medic/lucerne inoculant: inoculant Group AL. The listed cultivars are suited to most areas of the State but for colder, inland areas it is strongly suggested that only winter dormant or semi-winter dormant cultivars be sown.. Paddocks that have grown lucerne previously should be planted to pasture or other crops for 4-5 years before resowing to lucerne.

Winter Dormant Lucernes

Pioneer 545	10-15kg/ha	A high producing fine stemmed lucerne with similar disease and insect resistance characteristics to WL Southern Special. It has always produced less than WL Southern Special in Tasmanian cultivar evaluation projects.
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Prime	10-15kg/ha	Low crown, fine stemmed, good insect/disease resistance. Generally lower first year production.
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WL320	10-15kg/ha	Good hay characteristics, soft stems and larger leaves. Good insect and disease resistance.
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Outclassed: Pioneer 581

Semi Winter Active Lucernes

WL Southern Special	10-15kg/ha	One of the highest producing lucerne cultivars in local merit testing. Resistant to spotted alfalfa and pea aphids, bacterial and fusarium wilts and moderately resistant to blue green aphid and phytophthora root rot. An excellent soft stemmed lucerne for hay making. Limited growth in winter.
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Highly Winter Active Lucernes

WL 516	10-15kg/ha	One of the highest producing lucerne cultivars in local merit testing. Highly resistant to spotted alfalfa aphid, bacterial wilt and phytophthora root rot; resistant to pea and blue green aphids and fusarium wilts. An excellent lucerne for hay making. Winter growth should be lightly grazed to prevent frost or cold wind burn or preferably only grow in warmer or less frost prone areas.
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Eureka	10-15kg/ha	Bushy with fine stems, leafy plant. Good insect & disease resistance.
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Sceptre	10-15kg/ha	Tall erect habit, fine stems, good hay production. Good insect & disease resistance.
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Outclassed: Hunterfield, Trifecta, Siriver, Springfield