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Herbage Development Fact Sheet 7 • By Eric Hall and Andrea Hurst

Talish clover, cv. Permatas ♁

(*Trifolium tumens* Steve. Ex M.B.)

Origin
Recurrent phenotypic selection: 4 cycles of recurrent phenotypic selection for seedling vigour, seed production, stolon production and leaf marker within accession G31354, collected in the former Soviet Union and received by the USDA in 1939. Seed was received by TIA in 2002.

Breeders
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Description
Permatas♁ is a stoloniferous (Figure 1), persistent perennial clover with a dense prostrate growth habit to about 40cm. Growing points are located below the soil surface. Stems are slender and hairless. Leaves are trifoliate with hairless leaflets up to 3cm long and 2cm wide. Flowers are white with a pink tinge on long peduncles (Figure 2). Pods are a small, ovate, inflated bladder, containing 1 to 2 seeds. Talish clover develops a very thick deep taproot similar to lucerne (Figure 3). Seed is small and creamish brown in colour, ovoid around 1–1.3 mm in diameter.

Ploidy
Tetraploid.

Major attributes
Permatas♁ is a stoloniferous, persistent perennial clover with a dense prostrate growth habit and a very deep taproot. It has a very high level of drought and cold tolerance. Once established Permatas♁ can tolerate persistent close grazing by sheep as the plants growing point is below the soil surface.

Seasonal production
Permatas♁ produces most forage in the warmer months of spring/summer, but does have year round activity, producing high protein, high-energy forage with a high level of digestibility and nutritive value.

Drought tolerance
Permatas♁ has a very deep taproot and has an ability to become dormant through extended dry periods, as a result Permatas♁ has a very high level of drought tolerance. At several trial sites in Tasmania Talish clover has shown excellent persistence through years where annual rainfall has been as low as 300mm.

Cold tolerance
Very high. Tolerates frosts to –9° C with little or no frost damage.

Waterlogging tolerance
Will tolerate short periods of waterlogging.

Salt tolerance
Low.

Soil and climate requirements
Best adapted for sowing in low rainfall temperate areas receiving 300mm to 750mm average annual rainfall. Adapted to a range of soil types pH 5.0 to 8.5 and climatic conditions.

Maturity
Begins flowers in early October. Seed matures in December.

Seed size
Thousand seed weight 1.003gms (white clover 0.636gms).

Hard seed
Very high. Permatas♁ has a high level of hard seed > 80%.

Seed treatment
Seed must be scarified and inoculated with appropriate rhizobia prior to sowing.

Rhizobium
Group C (WSM 1325).

Sowing methods
Drilled, direct drilled or broadcast.

Sowing depth
Best sown at 5mm.

Sowing rate
3–6 kg/ha, depending on seedbed quality.

Sowing time
Preferably late summer to autumn for sufficient seedling development coming into winter, but can be sown in spring.

Land preparation
Well-cultivated firm seedbed required for best results. For direct drilling or broadcasting there should be as little vegetation as possible and adequate soil moisture prior to sowing.

Compatibility with other species
Suitable for sowing with other forage grasses and legumes with low to moderate seedling vigour. May be out competed by more vigorous species.

Suggested mix
Spanish cocksfoot, winter active tall fescue, phalaris, Talish clover and Caucasian clover.

Seedling vigour
Permatas♁ can be slow to establish if sown in the cooler months and should not be sown with more vigorous plants e.g., perennial ryegrass or bromes.

Grazing management
Forage production in the first year will be low and management should be concentrated on maximising the chances of successful establishment. Permatas♁ should be considered an investment that will provide returns for years to come. Once established can tolerate persistent close grazing by sheep.

Dry matter yield
4tDM/ha achieve under dryland conditions at Cressy, Tasmania.

Feed value
High.

Typical feed test figures

Crude protein (%DM)	22.3
Digestibility (%digestible DM)	78.9
Metabolizable energy (MJ/kg DM)	11.6

Anti-quality factors
None known.

Diseases
Some plants may suffer from mildew in years or areas where summers are wet.

Pests
Resistant to pasture grub attack. Highly susceptible to red legged earth mite attack as seedlings, but established swards appear more resistant.

Animal performance
No data available at this stage.

Figure 1

Figure 2

Figure 3: Four-year-old Permatas(Þ plant showing extensive tap root.

(Þ Variety is protected by Plant Breeders Rights