

Talish clover

Belinda Hackney

Research Agronomist, Pasture Genetics and Improvement Unit, Wagga Wagga

Dr Brian Dear

Principal Research Scientist, Pasture Genetics and Improvement Unit, Wagga Wagga

Introduction

Talish clover (*Trifolium tumens*) is a deep-rooted perennial legume. It is native to areas of the eastern Mediterranean, Caucasus and mountainous areas of the Middle East with a warm temperate or cool Mediterranean environment.

Talish clover has only recently been introduced to Australia. Germ plasm of Talish clover was introduced to Australia by Eric Hall of the Tasmanian Institute of Agricultural Research (TIAR) in 2002. This germ plasm was descended from material collected in the former Soviet Union in the 1930s, which had been forwarded to the United States Department of Agriculture. Subsequent collections have been conducted in Azerbaijan, with this material now under development by Eric Hall and Andrea Hurst (TIAR). New varieties are expected to be released as a result of this research.

Adaptation

Talish clover is well-suited to areas with temperate climates receiving between 300 and 750 mm average annual rainfall. It has shown very high tolerance to drought conditions, and is suited to soils with pH (CaCl_2) of 4.8 to 8.5. Talish clover has excellent cold tolerance, surviving frosts as cold as -9°C with little or no damage. It grows best on well-drained soils, but will tolerate short periods of waterlogging. It is not suited to saline soils.

In NSW, Talish clover has so far only been grown experimentally in tableland areas with an elevation greater than 700 m. As it originates from areas with temperate or cool Mediterranean climates, it is likely to be best suited to similar areas in NSW. It is unlikely to be suitable for use in regions with hot, dry summers.

Description

Talish clover is a stoloniferous perennial legume with a dense, prostrate growth habit, generally not exceeding 40 cm in height. Growing points are located below the soil surface so Talish clover can tolerate heavy grazing. Leaflets are up to 1.5 cm wide and 2 cm long, with a rounded tip. Flowers are round and pinkish-white in colour. Seed is oval in shape and creamish-brown in colour, with approximately 970,000 seeds/kg. Talish clover has a thick, deep taproot.

Varieties

Permatas, which will be released in 2010, will be the first commercial variety of Talish clover available in Australia. Permatas was selected for good seedling vigour, seed production and stolon production. It has very high levels of hard seed (93%), which, along with the deep taproot of adult plants, assists in long-term persistence.

Establishment and management**Sowing**

Talish clover can be sown into a conventional seed bed, or direct drilled to a depth of no more than 10 mm. The optimum sowing time for Talish clover is late summer to early autumn. Sowing at this time is desirable because it allows for maximum

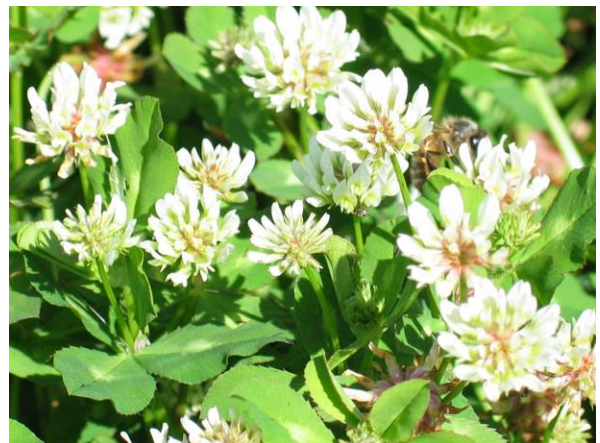


Figure 1. Talish clover (Photo courtesy Eric Hall TIAR)



seedling development prior to winter. Spring sowings may be successful, but are higher risk, as plants will have less root development, and will therefore be more susceptible to mortality via moisture stress in the first summer.

Talish clover should be sown at 3–6 kg/ha in a mix with perennial grasses such as cocksfoot, tall fescue or phalaris. Aggressive establishing grasses such as ryegrass and perennial bromes should be avoided, as they may out-compete Talish clover in the establishment phase.

Talish clover establishes well compared with other similarly drought-tolerant perennial legumes, such as lucerne and Caucasian clover (Table 1). The ability to establish relatively rapidly enables Talish clover to compete well against other pasture components and maintain a high proportion of legume in a pasture mix.

Table 1. Seedling numbers of three perennial legume species establishing at a field experiment sown at Berridale NSW in 2005

	Plants/m ²
Permatas Talish clover	162
Endura [®] Caucasian clover	21
Aurora lucerne	173

Inoculum

Talish clover can be inoculated with Group C or Group O inoculum.

Fertiliser

Adequate phosphorus (P) is required to optimise growth of legumes. At least 10 kg P/ha should be used when sowing Talish clover. Added sulfur (S) and molybdenum (Mo) may be required in some areas. Consult your local agronomist for further information

Grazing

Care should be taken to minimise grazing in the year of establishment. Once established, Talish clover can tolerate persistent close grazing, though rotational grazing is likely to optimise production and persistence.

Hard seed

Permatas Talish clover has very high levels (93%) of hard seed; therefore, seed must be scarified prior to sowing.

Pests and diseases

Talish clover is resistant to attack by cockchafers, a pasture grub that is common in tableland areas. It is susceptible to attack by red-legged earth mite, particularly at the seedling stage. Some plants can be affected by mildew in areas with wet summers.

Seed production

Talish clover is a prolific seeder, producing up to 30 g seed/plant. As it is an aerial seeding plant, seed can be harvested by direct heading.

Herbage production and quality

Herbage production

Once established, Talish clover is capable of producing moderate to high quantities of herbage (Table 2).

Table 2. Spring/summer herbage production of three perennial legumes at Berridale NSW in 2006/07

	Herbage production (t/ha)
Permatas Talish clover	3.1
Endura [®] Caucasian clover	0.25
Aurora lucerne	6.5

These measurements were taken from two year old stands. The ability of Talish clover to establish relatively quickly is evident in its superior production compared with Caucasian clover.

While productivity of Talish clover was much lower than that of lucerne in this experiment, it is far more tolerant of grazing than lucerne, as its growing points are located beneath the soil surface. It may, therefore, be a more suitable choice for inclusion in pasture mixes where long-term persistence is required.

Herbage quality

Talish clover is capable of producing herbage of very high quality (Table 3). No health problems have been observed in livestock grazing pastures containing Talish clover and there have been no reports of Talish clover containing any anti-nutritional compounds.



Table 3. *Herbage quality of Talish clover*

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

Digestibility data provided by Eric Hall (TIAR)

Acknowledgements

The authors thank Eric Hall and Andrea Hurst, Tasmanian Institute of Agricultural Research.

The authors also acknowledge the assistance of Craig Rodham and Gabrielle Dyce (formerly Technical Officer NSW DPI) for the management and maintenance of field trials associated with information contained in this Primefact.

Warnings

Pasture improvement may be associated with an increase in the incidence of certain livestock health disorders. Livestock and production losses from some disorders are possible. Management may need to be modified to minimise risk. Consult your veterinarian or adviser when planning pasture improvement.

Legislation covering conservation of native vegetation may regulate some pasture improvement practices where existing pasture contains native species. Inquire through your office of the Department of Natural Resources for further information.

© State of New South Wales through NSW Department of Primary Industries 2008. You may copy, distribute and otherwise freely deal with this publication for any purpose, provided that you attribute NSW Department of Primary Industries as the owner.

ISSN 1832-6668

Check for updates of this Primefact at:
www.dpi.nsw.gov.au/primefacts

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (March 2008). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of New South Wales Department of Primary Industries or the user's independent adviser.

Job number 8622