



## Trikkala Sub Clover

### *Trifolium yanninicum*

Trikkala is a white seeded mid maturing sub clover variety that displays excellent tolerance of waterlogging. It is suited to medium to heavy acidic soils receiving a minimum 450mm/year rainfall. Trikkala performs well on flood plains, and in irrigated environments. It has very low levels of hardseed but shows good winter and early spring vigour.

- Mid maturing white seeded variety
- Soft seeded variety with poor persistence
- Suited to waterlogging and heavy soils

### Seed agronomy table

Maturity	Mid
Days To Flower	112
Burr Burial Strength	5
Min Rainfall	450
Hard Seed Level	2
Waterlogging Tolerance	Very Good
Seeding Rate	Kg/Ha

Dryland  
High Rainfall / Irrigation

8-14  
15-20

Hard Seed Level 1 = Least Hard 10 = Most Hard Burr Burial Strength 1 = Very Weak 10 = Very Strong

## **Enterprises this seed is being used for**

Sheep  
Beef Cattle  
Horse  
Hay & Silage

## **Strengths**

- Tolerant of heavy grazing under set stocking.
- Vigorous seedlings provide good winter feed.
- Very persistent in high rainfall areas and other areas.
- Adapted to soils prone to winter waterlogging.

## **Limitations**

- Poor persistence on well-drained sandy soils.
- Insufficient hard seededness for persistence in tight cropping rotations (1 year crop; 1 year pasture).
- Susceptible to germination following false breaks.
- Shallow-rooted, so unable to capture deeper soil moisture and susceptible to premature death in dry springs.
- Some older cultivars have high oestrogen levels contributing to ewe infertility.

## **Plant Description**

A prostrate self-regenerating annual pasture legume tolerant of waterlogging and heavy grazing that grows from autumn through to spring and buries its burrs.

## **Pasture type and use**

Suited to permanent and semi permanent pastures and to crop rotations where cropping is infrequent. Other subspecies (subterraneum and brachycalycinum) are better suited to soils not prone to waterlogging.

## **Where it grows**

**Rainfall:** Adapted to winter-dominant rainfall area of southern Australia with annual rainfall

425 -1200 mm. Mid season varieties suited to medium rainfall zone, later flowering varieties suited to higher rainfall zone. Can also be grown under irrigation.

**Soils:** Prefers sandy loams to clays of moderate acidity (pH CaCl 4.5-6.5) and good water holding capacity. Highly tolerant of winter waterlogging.

**Temperature:** Widely adapted to the agricultural areas of Western Australia, South Australia, Victoria, New South Wales and Tasmania. Good frost tolerance.

## Establishment

**Companion species:** A range of perennial and annual grasses, balansa clover, gland clover, persian clover, purple clover, burr medic. On paddocks with patches of well-drained soils it can also be sown with subterranean clover ssp. subterraneum (black-seeded sub clover) and lucerne.

**Sowing/planting rates as single species:** 8-20 kg/ha. \*ensure seed is Goldstrike treated.

**Sowing/planting rates in mixtures:** 3-8 kg/ha, depending on the number of mixture components. \*ensure seed is Goldstrike treated.

**Sowing time:** Sow April-June, into moist soil following good weed control. Shallow sowing (<40mm) is essential.

**Inoculation:** Goldstrike treated. The use of Goldstike XLR8 seed treatment is recommended to reduce damage from insects at seedling stages. Can be biologically fix 25kg nitrogen/tonne of herbage dry matter.

**Fertiliser:** Phosphorus (with potassium or sulphur on deficient soils) at sowing - levels dependent on soil tests. Trace elements (Cu, Mo, Zn) may be required on very infertile soils.

## Management

**Maintenance fertiliser:** Annual applications of superphosphate (with potassium on deficient soils) are required to achieve maximum productivity. Levels are dependent on soil tests.

**Grazing/cutting:** Thrives under set stocking and can be grazed moderately hard while flowering. Likely to be shaded out from more erect plants under lax grazing. Can be cut for hay.

**Ability to spread:** Slow spread from site of sowing. Can spread by burrs attaching to wool.

**Weed potential:** Its slow rate of spread, its preference for moderate-high fertility soils and

specific rhizobia requirement gives it low potential as an environmental weed. It is readily controlled by a range of broadleaf herbicides within crop.

**Major pests:** Red legged earth mite is a major pest, particularly at plant establishment, where it can kill emerging seedlings, but also causes damage in spring. Timeritel has proved an effective means of control. Lucerne flea and blue green aphids can also cause damage in spring. Refer to chemical labels for suitability and recommended rates for insecticides.

**Major diseases:** Some cultivars are susceptible to the foliar disease clover scorch (*Kabatiella caulivora*), found in high rainfall, humid areas. Other foliar diseases in higher rainfall areas include leaf rust (*Uromyces trifolii-repentis*), powdery mildew (*Erysiphe polygonii*) and cercospora leafspot (*Cercospora zebrina*). Several root rots can attack subterranean clover, causing most damage to emerging seedlings and young plants. They include *Phytophthora clandestina*, *Fusarium avanaceum*, *Pythium irregulare* and *Rhizoctonia solanii*.

**Herbicide susceptibility:** Refer to chemical labels for suitability and recommended rates for herbicides registered for use on subterranean clover.

## Animal production

**Feeding value:** Excellent as green feed with in vitro digestibility in the order of 70% and crude protein over 20% until mid-flowering. Quality reduces once plants hay off. Dry herbage feeding value over summer is less than maintenance value (often < 50% in vitro digestibility) although animals may be able to obtain sufficient energy and protein by digging up seed burrs.

**Palatability:** Readily consumed by livestock, either as green or dry feed.

**Production potential:** Vigorous seedlings provide good early season production. Later flowering varieties capable of more than 10 t/ha annual production in long season environments.

**Livestock disorders/toxicity:** Some older varieties of subterranean clover contain high levels of phyto-oestrogens, which can affect the sheep reproductive system. The most active isoflavone is formononetin, which can cause a decline in ewe fertility. Two other isoflavones, genistein and biochanin A, are also present in all subterranean clover varieties, but these have less impact. If ewes are mated when they are grazing green, potent subterranean clover their reproductive performance can be temporarily impaired. Continued exposure over several years to high levels of formononetin can lead to permanent infertility. Ram fertility is not affected. Formononetin is present in subterranean clover only while the pasture is green. However, hay produced from oestrogenic varieties can be almost as potent as green pastures. Formononetin levels drop away during late flowering. Generally, dry subterranean

clover pastures that result from normal haying-off are not oestrogenic. However, if there is a very early finish to retain some potency in the dry state. All recently released varieties have low formononetin levels. There have been isolated reports of cattle bloat on very clover-dominant subterranean clover pastures.

## International Contact

### For international enquiries please contact

Sean Coffey

International Business Manager

[+61 4 2865 2226](tel:+61428652226)

[sean.coffey@pasturegenetics.com](mailto:sean.coffey@pasturegenetics.com)



Disclaimer: Pasture Genetics has taken all reasonable care in the preparation of this publication. The information contained is thought to be correct at the time of publication. Always seek professional advice from your local agronomist or Pasture Genetics representative prior to purchasing any products. Combined information provided courtesy of Pastures Australia and Pasture Genetics

14 -16 Hakkinen Road, Wingfield, SA • T 08 8445 1111 • F 08 8445 7777 • [seed@pasturegenetics.com](mailto:seed@pasturegenetics.com) • [pasturegenetics.com](http://pasturegenetics.com)