Heritageseeds

MONTI
SUB CLOVER

450mm+

pH 4.5-7.0

Medium to Heavy

C or AgriCote

PBR

KEY FEATURES

- Flowers 2 days earlier than Trikkala and 8 days earlier than Gosse
- Produces excellent early winter growth, averaging 46% more than Trikkala over 2008-2009
- Excellent adaptation to the shorter growing seasons experienced over the last decade
- Produces excellent seed yields and regenerates reliably
- Has better tolerance to Phytophthora Root Rot and Clover Scorch disease than Trikkala
- Well suited to areas receiving an annual rainfall of 450-550 mm and prone to waterlogging

DESCRIPTION

Monti is an exciting new sub clover cultivar that has recently been released by the APA. Monti is the earliest maturing cultivar of this type. Monti has exceptional early season growth and regenerates reliably. Monti will improve the legume content and productivity of pastures in the waterlogged areas of southern Australia.

The leaf markings of Monti are different from all other yanninicum cultivars except Trikkala, although Monti has leaf flecking unlike Trikkala (see photo top right). Its flower is predominantly white with slight pink venation. The seed of Monti is similar in appearance to that of other yanninicum cultivars, being relatively large (approx. 146,000 seeds/kg), white coloured seeds.
Monti has a semi-prostrate growth habit.

Monti has been selected for use in permanent or long term phase pastures. It is adapted to temperate areas receiving 450-550 mm annual rainfall and will perform to its best where intermittent winter waterlogging occurs. Like other yanninicum cultivars, Monti is particularly well adapted to moderately acid soils (pH 4.5–7.0 $CaCl_2$) that range in texture from sandy loams to clays.

PEST & DISEASE TOLERANCE

Monti possesses similar levels of tolerance as other *yanninicum* cultivars to Red Legged Earth Mites, Lucerne Flea, Blue-Green Aphid and Spotted Alfalfa Aphid (Table 1). Importantly, Monti has better tolerance to Phytophthora Root Rot than Trikkala and Larisa (Table 1).

Phytophthora can be extremely damaging to emerging seedlings, leading to extensive losses. Monti is also more tolerant to Clover Scorch disease *(Kabatiella caulivora)* than Trikkala. Clover Scorch can also be very damaging to sub clover stands in the waterlogged areas in which *yanninicum* cultivars are typically grown and therefore this heightened level of tolerance is important.

Table 1. Pest and Disease Tolerance Ratings

Cultivar	Red Legged Earth Mite*	Lucerne Flea*	Blue-Green Aphid*	Spotted Alfalfa Aphid*	Phytophthora Clandestina**	Clover Scorch*
Monti	**ST**	**ST**	**VT**	**T**	**0.9**	**3.6**
Trikkala	ST	ST	VT	T	2.6	5.5
Gosse	ST	ST	VT	T	1.1	2.6
Larisa	ST	ST	T	T	2.3	NA

Pest ratings: VT = very tolerant; ST = some tolerance; T = tolerant.
Phytophthora ratings: 1 = low incidence of disease; 5= high incidence of disease.
Clover Scorch ratings: 1 = low incidence of disease; 10 = high incidence of disease. NA: Not Assessed
* Data sourced from Mitchell (1990). ** 2010 WA glasshouse screening studies.

VARIETY MANAGEMENT / AGRONOMY

Establishment: *Sowing Rate:* 2 – 8kg per hectare in a pasture mix or blend.
Seed Bed Preparation: It is recommended to sow following the autumn break into a fine, well prepared seed bed. Seed should be sown with a starter fertilizer and the correct inoculant applied to the seed. Alternatively Pro-Tech coated seed can be used which includes inoculant, fungicide, micro nutrient's and bio stimulants to enhance germination. *Sowing:* Best results are achieved by direct drilling Sub Clover into the top 1 – 1.5cm into a fine seedbed, press wheel's or light rolling will assist establishment in most cases. This should be avoided if the soil is hard setting.
Grazing: Sub Clovers respond well to grazing once established, this is generally when plants will not easily pull from the soil. A good seed set is vital in the first year of a sub clover pasture to ensure regeneration in the 2nd and subsequent years. To encourage seed set, medium to heavy grazing through late winter /early spring is recommended. Stock numbers should be significantly reduced when the Sub Clover starts flowering and until seed set has occurred. Best regeneration will occur the following autumn if the remnant dry growth is removed and good weed control is undertaken. Hay making in the establishment year should be avoided as it will significantly reduce Sub Clover seed set and future regeneration.

PERFORMANCE

Monti has been extensively tested in trials across South Australia and Victoria. Monti demonstrates exceptional early season growth, out-yielding Trikkala, Riverina, Gosse, Napier and Larisa in almost all assessments. In field studies conducted at three sites in South-East South Australia and western Victoria over 2008-2009, Monti produced 46 % more early winter dry matter than Trikkala (Table 2). Increases in pasture availability at this time of year are particularly valuable.

Table 2. Average seasonal dry matter yields (kg/ha) at 3 southern Australian sites during 2008 - 2009

Cultivar	Early Winter	Late Winter	Spring
Monti	**1321**	**2611**	**5479**
Trikkala	908	2383	5258
Riverina	637	2114	5407
Gosse	1013	2366	5395
Larisa	555	1802	5448
Napier	583	1747	5287
l.s.d (P=0.05)	267	250	ns*

* not significant

As the earliest maturing *yanninicum* cultivar, Monti is well adapted to take advantage of shorter growing seasons whilst still producing high levels of dry matter. The early maturity, good hard seed level and high seed yields also lead to a more reliable regeneration and persistence over time.
Reliable regeneration is also dependent on the amount of soft seed available at the autumn break. Table 3 shows that the soft seed levels of Monti had increased to around 33% by May, similar to those of Trikkala and Gosse. In contrast, Riverina and Napier had the lowest soft seed levels and demonstrated the poorest seedling regeneration.

Table 3. Days to flower, soft seed content, seedling regeneration and seed yield

Cultivar	Days to Flower Difference	Soft Seed Content (May %)	Seedling Regeneration (plants/m^2)	Seed Yield (kg/ha)
Monti	**0**	**33**	**1405**	**1975**
Trikkala	+2	36	1320	2074
Riverina	+5	14	448	1766
Gosse	+5	34	765	1599
Larisa	NA	27	635	1458
Napier	+14	17	191	1204
l.s.d (P=0.05)	NA	10	301	187

NA: not available