



A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

## Bladder clover

### Scientific name(s)

*Trifolium spumosum*

### Strengths

- Productive annual forage tolerant of heavy grazing in medium-low rainfall areas
- Suited to self-regenerating ley or short-term phase farming systems
- Protection against false breaks
- High seed yields, which can be direct headed and cleaned using common crop harvesting machinery.
- Very well adapted to mildly acid and alkaline sandy-loam and loam soils
- High level of hard seed enables regeneration after cropping
- Ideal companion plant in mixtures with other legumes such as subterranean clover or serradella

### Limitations

- Not adapted to waterlogged soils

### Plant description

Bladder clover is an aerial seeding, self-regenerating annual legume.

### Pasture type and use

Bladder clover is a pasture legume for grazing in ley or short-term phase farming systems. It is a lower cost alternative to subterranean clover and annual medics in many situations due to its high seed yields that can be direct harvested by grain harvesters.

### Where it grows

#### Rainfall

Suited to regions with 325 to 500 mm annual rainfall. with a predominantly autumn-winter-spring distribution.

#### Soils

Eastern star clover grows on a range of soils with pH ranging from 5.0 - 8.0 (CaCl<sub>2</sub>) and soil textures, provided they have reasonable fertility. Not tolerant of prolonged waterlogging or salinity.

#### Temperature

Susceptible to severe frosts.

### Establishment

#### Companion species

Compatible with many annual legumes (e.g. subterranean clover, biserrula, serradella, crimson clover, rose clover and gland clover, annual medics) and perennial grasses (e.g. Italian ryegrass, consol lovegrass and Premier digit grass).

#### Sowing/planting rates as single species

Sowing rate for seed production and pure pasture swards should be between 5 and 10 kg/ha. Sow shallow at 0.5 cm. Rolling after sowing is an advantage.

### **Sowing/planting rates in mixtures**

Sow at 1 to 5 kg/ha in mixtures with other pasture legumes.

### **Sowing time**

Sow bladder clover as close to the break of season in autumn as possible.

### **Inoculation**

Seed of bladder clover must be inoculated with the new group C rhizobium (strain WSM 1325).

### **Fertiliser**

Sow with 100 - 150 kg/ha superphosphate, or super/potash if on sandy soils.

## **Management**

### **Maintenance fertiliser**

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### **Grazing/cutting**

Can be heavily grazed in winter. Reduce stocking rate at flowering time.

### **Seed production**

Seed is easily harvested using conventional grain harvesting machinery. Bladder clover has the potential for very high seed yields. Machine harvested seed yields of bladder clover have ranged from 0.5 to 2 t/ha

### **Ability to spread**

Many seeds of bladder clover survive ingestion by sheep and can be easily spread around paddocks.

### **Weed potential**

There have not been reported cases of bladder clover growing within native vegetation.

### **Major pests**

Bladder clover is moderately tolerant to blue green aphid and lucerne flea.

### **Major diseases**

It has little or no sensitivity to clover scorch (*Kabatiella caulivora*) disease. Occasional infections of pseudopeziza leafspot have been observed in high rainfall areas.

### **Herbicide susceptibility**

Bladder clover is sensitive to many of the more common broadleaf herbicides including Bromoxynil, Spinnaker® and Raptor®. Broadstrike® appears reasonably safe and Tigrex® may offer an intermediate weed control option.

Grass weeds can be safely controlled with common grass-selective herbicides.

## **Animal production**

### **Feeding value**

The feeding value of bladder clover is similar to subterranean clover. Digestibility of bladder clover in spring is usually around 82%, with 22% crude protein, these values decrease with senescence.

Grazing trials have shown no differences in liveweight change or wool growth between sheep grazing bladder and subterranean clovers.

### **Palatability**

Moderately palatable

## **Production potential**

The quantity of forage produced by bladder clover is generally equivalent or better than current pasture options. Peak dry matter yields in small un-grazed experimental swards have ranged between 4 and 7 t/ha.

## **Livestock disorders/toxicity**

No livestock disorders have been reported but, as with most legumes, could cause bloat in cattle in very pure bladder clover swards.

Levels of formononetin (0.015%) and genistein (0.002%) in bladder clover are lower than in subterranean clover cv Dalkeith and are unlikely to cause a phyto-oestrogen effect in grazing animals.

## **Cultivars**

Agwest® Bartolo is the first cultivar of bladder clover commercially released to world agriculture.

## **Further information**

For more information, phone Dr Angelo Loi (08 9368 3907) and Mr Brad Nutt (08 9368 3870) Department of Agriculture and Food Western Australia.

Weblink:

The Australian Society of Agronomy

A guide to Australian Pasture Legumes - Bladder clover

## **Acknowledgements**

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## **Author and date**

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