



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

Crimson clover

Scientific name(s)

Trifolium incarnatum

Strengths

- High winter growth rate.
- More upright growth for silage and hay production than subterranean clover.
- Deep rooting habit gives greater spring production than subterranean clover.
- Good tolerance of clover scorch. Cheaper to resow than subterranean clover after long cropping phases.
- High seed production.
- Seed can be harvested with a conventional header harvester.

Limitations

- Cannot be used in crop rotations
- Susceptible to germination following false breaks
- Not adapted to waterlogged soils
- More susceptible to damage from virus diseases than subterranean clover or medic.

Plant description

It has trifoliate leaves, with individual leaflets being relatively large, on average measuring 1-3 cm long and nearly as wide. Flowers are cylindrical in shape, measure up to 40 mm in length, and are generally bright red, though an occasional yellow or white flower may occur.

Pasture type and use

Crimson clover it is a highly productive aerial-seeding plant suited to short-term pasture phases for both grazing and fodder production.

Being soft-seeded, crimson clover needs to be resown at the start of each pasture phase. It produces very dense regenerating pastures in the year following sowing, but will not regenerate following a crop. Seeds can be header harvested, enabling a ready supply of relatively low-cost seed.

Where it grows

Rainfall

Crimson clover is generally suited to areas with >500 mm annual rainfall. However, its deep rooting habit may make it suitable to grow in areas with a perched water table and annual rainfall as low as 425 mm.

Soils

Crimson clover grows on a range of soils with pH ranging from 4.5 - 8.0 (CaCl₂) and soil textures, but will not persist on deep, infertile sands. Crimson clover has some tolerance to transient waterlogging, but is not as well adapted as Persian and Balansa clovers to extended periods of waterlogging. Not tolerant of salinity.

Temperature

Tolerant to frosts

Establishment

Companion species

Compatible with many annual legumes (e.g. subterranean clover, biserrula, serradella, rose clover and gland clover) and perennial grasses (e.g. Italian ryegrass, consol lovegrass and Premier digit grass). It can also be sown with cereal rye or oats for fodder production (silage or hay).

Sowing/planting rates as single species

As a pure forage or seed crop, sow 10-20 kg/ha to achieve a dense stand. Sow 6 kg/ha of crimson clover with 3 kg/ha each of subterranean clover, cereal rye and oats for mixed fodder production.

Sowing/planting rates in mixtures

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

Sowing time

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

Inoculation

Seed of crimson clover must be inoculated with group C rhizobia.

Fertiliser

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

Management

Maintenance fertiliser

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Grazing/cutting

Crimson clover can be grazed heavily in winter and early spring. Grazing must be reduced from flowering onwards to achieve good seed yields. During this time stock can be transferred to subterranean clover pastures.

In dairy areas, crimson clover is a good silage or hay option. Crimson clover grows rapidly in winter and can be grazed heavily during this time. In spring, grazing pressure should be reduced for silage or hay production.

Seed production

While the aerial seeding habit of crimson clover makes it easy to header harvest, threshing the seed is difficult. This is because the seed pods are difficult to separate from a tough calyx that encloses them. In Western Australia, some of the most successful harvesting operations have used open front, finger tine machinery with drum speeds of 800 to 900 rpm and a gap of 1 - 3 mm.

Ability to spread

Limited

Weed potential

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

Major pests

Crimson clover is susceptible to damage by red-legged earth mite particularly at the seedling stage. It is also susceptible to attack by blue-green aphids.

Major diseases

A number of fungal diseases can affect crimson clover. These include crown and stem rot, which is most prevalent during wet winters in ungrazed swards. Fusarium wilt and fusarium root rot may also affect crimson clover. The incidence of these diseases may be reduced by avoiding sowing crimson clover on poorly-drained soils, and by moderate grazing through winter to reduce humidity in the canopy, which is conducive to fungal growth.

Crimson clover is also susceptible to virus diseases, particularly Bean Yellow Mosaic Virus. Crimson clover is generally tolerant of the clover scorch disease (*Kabatiella caulivora*), which is common in many areas of southern Australia where clovers are grown.

Herbicide susceptibility

Crimson clover is reasonably tolerant to most of the broad-leaf herbicides available. Grass weeds can be safely controlled with common grass-selective herbicides.

Animal production

Feeding value

Herbage produced by crimson clover is of very high quality, with winter and early spring levels of crude protein around 20-25% and dry matter digestibility of 70-80%. Crimson clover rapidly loses quality from the commencement of flowering through to maturity.

Palatability

Palatable

Production potential

Crimson clover is one of the most productive annual legume species in high rainfall areas, capable of producing up to 10t/ha of dry matter when sown as a one year fodder crop.

Livestock disorders/toxicity

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

Crimson clover has very low to undetectable levels of the isoflavones associated with infertility in sheep.

Cultivars

Cultivar	Seed source/Information
Caprera	
Blaza	
Dixie	
Contea	

Further information

For more information, phone Dr Angelo Loi (08 9368 3907), Mr Brad Nutt (08 9368 3870), Department of Agriculture and Food Western Australia., and Belinda Hackney, NSW Department Primary Industries (02 6938 1858)

Farmnote 207 - Clover scorch disease of pasture legumes and its control (DAFWA)
Pasture legumes for temperate farming systems - the ute guide

Acknowledgements

The contributions of all staff of the Department of Agriculture and Food Western Australian.

Author and date

Angelo Loi

January 2009