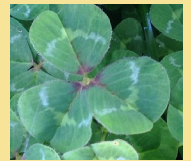




Source: Ramsey Seed Inc., California

Good clover, bad clover—identification



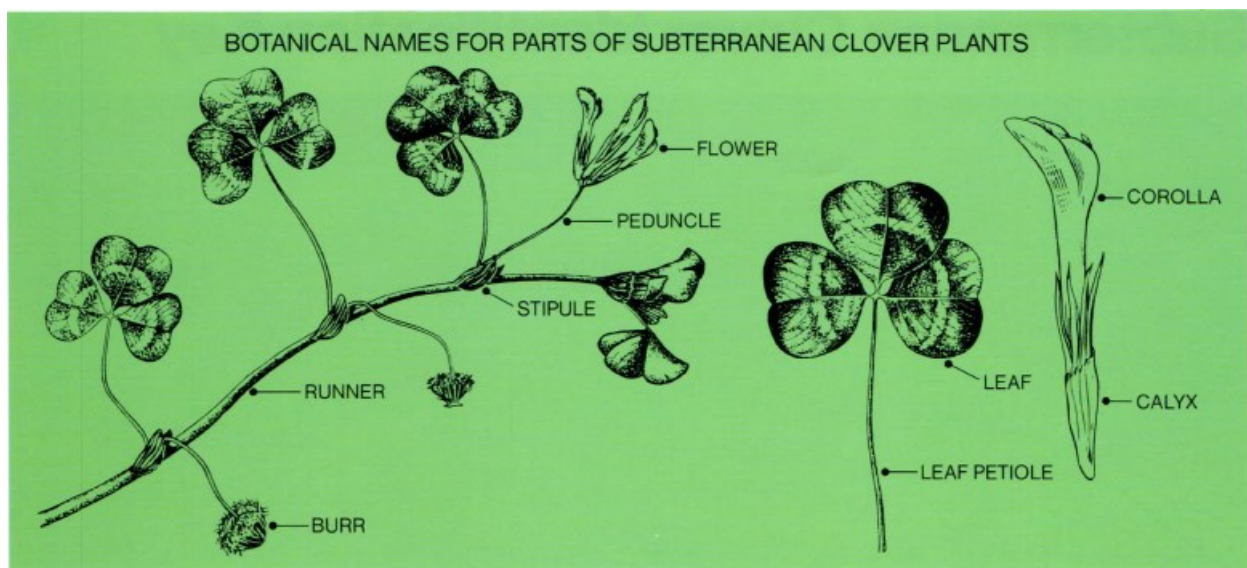
Identifying the 'bad' clovers

The 'bad' clovers which are highly oestrogenic are Dinninup, Dwalganup, Yarloop and Geraldton. When these clovers make up 20 percent of the pasture eaten by ewes 'clover disease' or ewe fertility problems could occur.

To identify these cultivars three parts of the plant need to be examined: the **leaf markings**, the **hairiness of the runner** (not the leaf stalk) and the **colour of the calyx** below the petals in the flower. The leaf markings can

be subtle but distinctive ranging from bands across the leaflet, a central light green spot with paler or white side flecks, or white side flecks, or just a plain leaflet without these markings.

Examine a number of leaves on the one plant to ensure the leaf markings are identified correctly. Markings can vary with growth stage, impacting on their brightness and also other secondary markings. The hairiness of the runner (not the leaf stalk) can be either hairy or not hairy. Hold the runner up to the light to view the fine hairs which vary from sparse to very hairy, both classified as hairy.



Source: Registered cultivars of subterranean clover,(1996) DAFWA



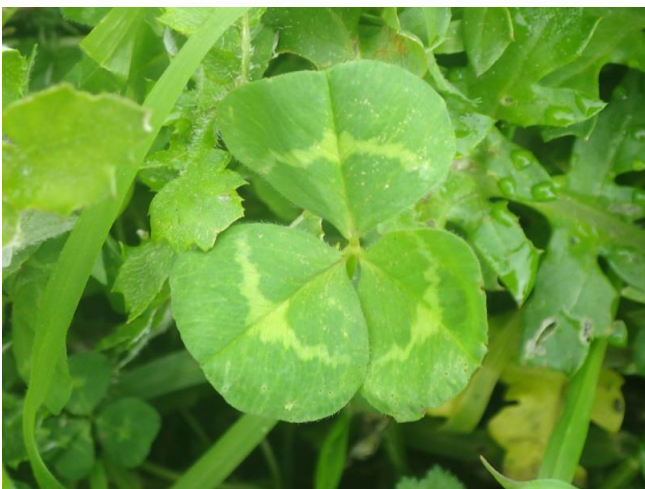
Good clover, bad clover—identification

Different cultivars can have completely hairless runners. The calyx colour can either be green or red. Different growing conditions could see the red become light purple.

Other features help distinguish these bad clovers from the good clovers including leaf marking brown outlines, distinct mid rib, leaflet colour and shape, presence of small black flecks and subtleties of the leaf markings.

Dinninup

Leaf markings are a green band and sometimes under good conditions with subtle pale side flecks. Young leaves often have a vivid arrowhead leaf marking with a brown outline. Band varies in colour with good fertility.



The runner is hairy and the calyx is often purple to red. (Leaf markings are often confused with Woogenellup (low oestrogens), but the runner is hairless and the calyx is green).

A relatively new cultivar Bindoon (low oestrogens), is virtually indistinguishable from Dinninup as it has similar leaf markings, a hairy runner and purple to red calyx. Avoid sowing Bindoon if Dinninup is already present in the pasture.



Dinninup—hairy runner and purple calyx



Dinninup – with pale side flecks and green band



Dwalganup

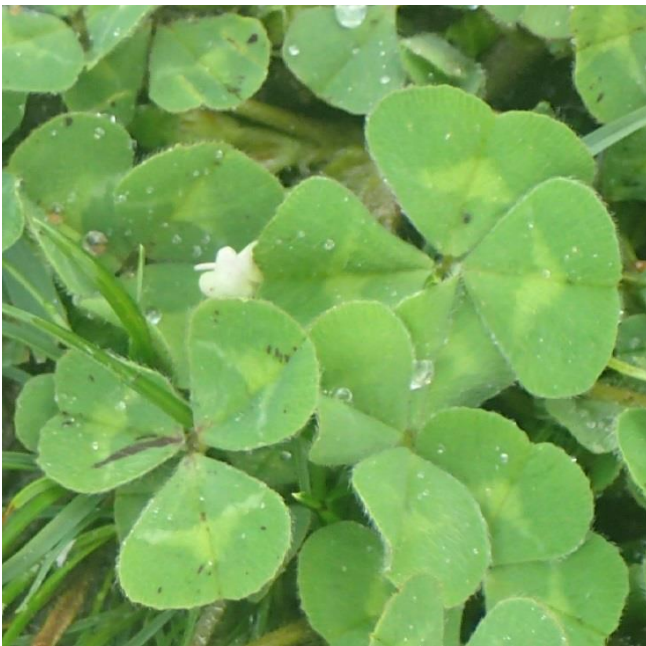
Dwalganup is distinguished by a central green spot and angled down white side flecks on the leaf marking, hairy runner and green calyx.

It is an early season cultivar so has large runner to leaflet ratio, i.e. more runner to less leaf compared to later types. Leaflets are characteristically more blue-green colour and slightly more hairy. Some leaflets have a slight wave in the top when viewed side on. The green calyx can sometimes have a slight pink tip.



Dwalganup – blue green leaflet colour

Green calyx is shown in the photo below



Note: The side flecks on the older, larger leaf have faded. Black flecking is also present on some leaflets, as is a subtle, but distinctive wave curl in leaflet shape (in central, lower right of the photo).





Good clover, bad clover

Yarloop

Yarloop is the easiest oestrogenic clover to identify. Leaf markings when fresh are white side flecks on a pale green leaflet. The runner is hairless and the calyx is green.

Yarloop has very distinguished, more triangular shaped leaflets with either no side arms or white side arms. Yarloop, like Geraldton, has leaflets which stand apart with a wider gap between them. Leaflets may also have brown midrib.

Yarloop – note space between leaflet



Further Information

Contact: David Woodard

Email: david.woodard@sa.gov.au

Mob: 0417 803 525

Fact Sheet compiled by David Woodard, Ian McFarland & Tiffany Bennett of PIRSA Rural Solutions.

Geraldton

Geraldton has a central thin green band across the leaflet, has hairy runners and a purple to red calyx.

Geraldton has a very distinguished, more triangular leaflet similar to the Yarloop shape. Leaflets stand apart. As an early season cultivar it has a large runner to leaflet ratio compared to later cultivars, so it looks like it has more stems than leaf.

Geraldton – thin green band, leaflets separated, note very hairy runners



Project Partners



Disclaimer:

The information contained in this publication is offered by the MacKillop Farm Management Group solely to provide information. While all due care has been taken in compiling the information, MacKillop Farm Management Group and its directors, officers and employees take no responsibility for any persons relying on the information and disclaims all liability for any errors or omission in the publication.