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WHITE CLOVER

White clover is the most important forage legume currently grown in the UK. It has considerable potential for use in dairy, beef and sheep and organic farm enterprises. Mixed swards of grass and white clover can be managed successfully for grazing and conservation. It is well established that white clover can improve animal performance.

BENEFITS

- Converts atmospheric Nitrogen into a plant usable form
- Reduces N fertiliser use
- Improves soil structure
- Is flexible:
 - suitable for low-input and less intensive systems
 - productive in both re-seeded leys and permanent pastures
 - suitable for grazing and conservation
- In a mixed sward white clover can fix the equivalent of 100-200 kg of N/ha
- High quality feed– high protein and digestibility
- High animal intake and performance

ESTABLISHMENT

- Soil pH 5.8 or higher
- Soil P and K indices of 2
- Fine firm seedbed
- Shallow sowing - not deeper than 1.5cm
- Seed rates: 1.5 kg/acre of white clover + 10-12kg/acre of perennial ryegrass
- Sow from April to August
- Broadcast the seed and then roll.
 - Oversowing – white clover can be sown into existing grass-dominant swards at a rate of 3 kg/acre
 - The existing sward needs to be very open, so the best time is when the sward has either just been grazed down or cut for silage
 - Broadcast seed then lightly harrow, or graze with sheep (heavy harrowing can be beneficial in dry conditions)

CONCERN	ADVICE
Bloat	<p>Introduce stock slowly to clover leys</p> <p>Avoid daily changes in quality and quantity of feed available</p> <p>Feed a dry fibrous buffer in the spring and autumn</p> <p>Take care on cold, wet, chilly mornings</p> <p>Negligible risk with high clover content silage</p>
Persistence	<p>The clover content of a sward will change both during the grazing season and between years</p> <p>Stolon survival is essential for the maintenance of clover in the sward - over grazing and winter damage can reduce stolon density and lead to lower yields</p> <p>To avoid over-grazing, choose a rotational rather than continuous grazing system or maintain a minimum sward height of 6-7 cm</p> <p>Avoid hard grazing over winter</p>

MANAGEMENT

- Maintain soil P and K indices of 2. Swards cut for silage require extra P and K from slurry and purchased fertilisers. Injecting slurry into grazing swards improves production
- A white clover sward will produce only 10% less DM than a ryegrass sward receiving >200 kg N/ha
- Taking a (6 week) silage cut during the growing season can increase the clover content of a sward
- The protein content of grass/white clover swards increases during the grazing season to 25% - at this level of protein, animals may need an energy-rich supplement (e.g. cereal grains)
- Late spring growth – to avoid a late turn-out date either apply up to 50 kg of N in early season (conventional farm) or slot seed ryegrass or rye into an existing sward during the previous autumn (organic farm)
- Clover grows later in the season than ryegrass so it is important to keep swards grazed tightly at the start of Spring until the clover gets going

CONSERVATION

- Wilt to >25% DM but avoid over-wilting and field losses.
- In wet difficult conditions use an acid based additive on high white clover content silage leys
- In good silage making conditions an inoculant will reduce loss
- Clamp management: ensure good consolidation and sealing of the clamp
- Although white clover has a high buffering capacity and low sugar content most ensiled crops from mixed swards will have a grass content of 60-85%
- White clover silage leads to high silage intakes, improved digestibility and better animal performance

Silage quality

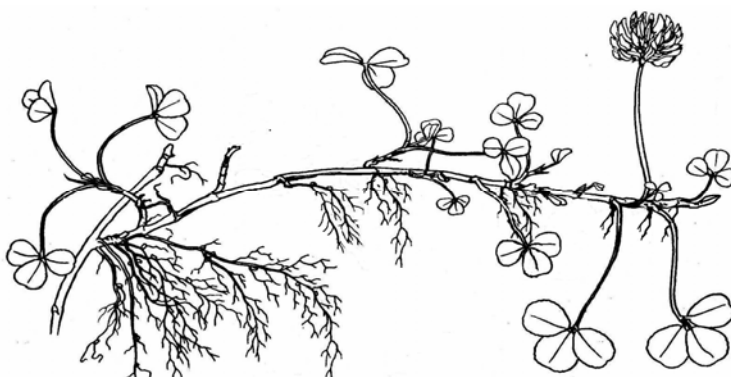
- ME: 10.0-11.2 MJ/kg DM
- Crude Protein: 12% - 20%

WHICH WHITE CLOVER?

Small leaf: sheep grazing

Medium leaf: cattle & sheep grazing

Large leaf: cattle grazing/conservation



The Grassland Development Centre, based in IGER, is managed by the Welsh Assembly Government as part of Farming Connect. Caiff y Ganolfan Datblygu Tir Glas, sy'n seiliedig yn IGER, ei rheoli gan Lywodraeth Cynulliad Cymru fel rhan o Cyswllt Ffermio.



GDC, Institute of Grassland and Environmental Research / GDC, Sefydliad Ymchwil Tir Glas ar Amgylchedd Plas Gogerddan, Aberystwyth, Ceredigion, SY23 3EB. Contact: Dr Heather McCalman, Manager, Tel No. 01970 823026.

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