Factsheet

Grassland productivity for livestock

How do I maintain grassland productivity?

Nitrogen-fixing legumes, such as clover, are very important for maintaining productivity in organic leys.

White clover is common in organic grazing leys at populations of 30–50% of the total sward. Where there will be no impact on species-rich pastures, permanent pastures can be improved by careful management. By applying approved liming materials to raise the pH to a minimum 5.8–6.0 and ensuring adequate phosphate and potash levels, native species of grass and clover can be established or encouraged that are more palatable to stock. Cutting for hay or silage may also help improvement where this is possible.

In some instances over-sowing with clover, or a complete re-seeding where leys are grown as part of a rotation, will be appropriate. The most successful approach is to over-sow white clover seed in March or September, following a tight cut or mob grazing of the sward with sheep. Clover seed is then broadcast and either lightly harrowed and rolled, or heavily stocked with sheep. Strip/slot-seeding or sod-seeding with appropriate clover species is also an option.

Organic leys can vary widely in their species diversity. Natural and semi-natural grassland can provide valuable grazing, with good levels of minerals and trace elements. Improved permanent pastures are also valuable and can provide good levels of productivity. Short-term ley mixtures will vary in their species content depending on requirements and regional and climatic factors. Red clover and Italian ryegrass mixes are commonly used for short-term forage conservation, particularly within rotations on mixed farms. Emphasis should also be put on the strategic use of properly composted farm yard manure.

New leys can go in spring or early autumn, depending on the rotation. Suppliers of organic clover/ley-mix seeds are listed at www.organicxseeds.co.uk

What is the best seed mix for organic production?

Traditional 'organic' leys included a mixture of perennial ryegrasses, Timothy, Meadow Fescue, Cocksfoot, white clovers and herbs to increase diversity, production and resistance to disease. Clifton Park and Cockle Park mixtures or variants were widely used for long term leys – and are gaining popularity again – but there is much debate about the advantages and disadvantages of these high-diversity mixes and advice should be obtained from seed merchants regarding the use and duration of the pasture.

Under the organic standards producers are required to source certified organic seed, where available.

Following work between Soil Association and key seed suppliers, an increasing range of organic grass/clover varieties and ley mixes with a minimum percentage of certified organic seed are becoming available.

An up-to-date organic seed suppliers list can be found at www.organicxseeds.co.uk

Can I use any fertilisers to improve the grass production?

The use of rotation (where appropriate), the encouragement of clover in the sward, and the appropriate application and incorporation of composted farm yard manure (FYM) and slurry are the primary tools in maintaining grassland fertility. Any other inputs should be seen as supplements to the system – and not substitutes. Inputs should only be called upon when necessary in the event of key deficiencies.

There are a number of permitted inputs that can be used to correct identified deficiencies. These include natural rock phosphate and ground limestone, for example. Certain other inputs, such as meadowsalt and key trace elements, are for use only after you have gained the prior permission of your certification body.

Any request for the use of inputs that require prior permission must be accompanied with recent soil, forage or blood analysis results to show why the product is needed and full details of how the system will not become reliant on the product.

Where possible, fields cut for silage should be rotated to prevent depletion of nutrients. Where this is not possible adequate amounts of manures and permitted fertilisers should be applied to maintain fertility.

Artificial fertilisers, including ammonium nitrate, muriate of potash and urea, are not permitted. Various technical guides and lists of inputs are available in the farmer and grower section of the website

How are perennial weeds, such as thistles and docks, controlled?

As all herbicides are prohibited in organic systems, weed control must be achieved by management practices and mechanical methods.

The key approach is to consider what conditions and environments a particular weed favours – and wherever possible, look to provide the conditions that this weeds finds unfavourable!

Practices such as a good and varied rotation with mixed winter and spring sown crops, sub-soiling and improved drainage, improving overall fertility levels, raising the pH, preventing over-grazing and, where appropriate, repeated cultivations all have their place in making life uncomfortable for key weed species. Don't underestimate the benefits of mixed grazing systems.

For problem weeds, such as docks and creeping thistle, the message is one of an on-going programme of control in an organic system, rather than short-term eradication:

Creeping thistle thrives in fertile, undergrazed pasture but does not survive long on silage land. Repeated topping just before and during flowering in June – certainly before seed set – and again in August should eventually control the problem on permanent pastures. Whilst very labour-intensive, hand-roguing with small teams using specialist tools can significantly reduce problem areas.

Do not top or cut too early in the season, or too soon before flowering, as this will simply encourage root development and creeping.

Docks are the most difficult weed to control in an organic system. A dense, well managed sward will minimise infestation since seedling docks are poor competitors. However, bare soil patches caused by poaching or over-grazing will enable docks to rapidly germinate and establish. Avoid poaching, soil compaction and the over-use of

slurry. An effective topping regime to prevent seeding will reduce minor problems in the long-term.

Physically removing problem infestations by hand may be labour intensive but can prevent long-term problems from developing – ask us about the 'Lazy Dog' tool! And don't underestimate the benefits of mixed grazing systems. Well-planned crop rotations can also be very effective in controlling docks but a wide range of measures will most probably be necessary.

In the case of severe infestations, and where rotations can be applied, a bastard fallow with repeated cultivations to bring the tap root to the surface may be necessary in early-mid summer.

Under the standards all herbicide use is prohibited, including spot-spraying or weed-wiping.

Garden Organic publishes in-depth weed control guides.

Can I have too much clover?

Provided that the seed mix is correct when sown the clover will not normally get out of balance. Advice is available from your organic seed merchant.

What about bloat?

Animals should be introduced to clover-rich swards gradually and should not be let out onto clover-rich swards on an empty stomach. Fibre in the form of straw, hay or big bale silage should be fed beforehand – or ad lib – to make sure they don't gorge themselves on clover. A homoeopathic treatment, colchicum, is available from homoeopathic pharmacies and this can be added to water troughs every day to prevent bloat. Always keep an eye on stock that have recently been put into fields with a high clover content, especially following wet weather.

Where an animal does suffer, proprietary treatments containing surfactants or a non-GM vegetable oil can be administered. Organic vegetable oil can also be added to the water-trough to help prevent bloat.

Can I use silage additives?

Silage additives should only be necessary in seasons where wilting is difficult or for late cut silage where sugar levels are low. Molasses, bacterial and enzyme additives are acceptable in such cases. Good wilting and the higher soluble carbohydrate levels in organic swards will normally ensure a good fermentation.

The use of acid silage additives are allowed in cases of extreme weather conditions only. Approval will be given on a case-by-case basis by SA Certification.

Enzyme additives derived from genetically modified (GM) organisms are prohibited.

A list of permitted micro-organisms and inoculants is available as a technical guide.

Can I feed crimped grain?

Six acids are permitted for crimping moist grains in the standards.

Will I still be able to get two cuts of silage?

Grass production may be lower on an organic unit but this will be partly compensated for by higher dry matter levels. Hay and silage making may be a week or two later than usual, but two cuts are normal on organic grassland and with careful management and favourable conditions, a third cut can sometimes be made.

What dry matter yields can be expected?

Advances in the development of new white clover-ley mixes mean that dry matter (DM) yields of around 8 tonnes/ha can be expected from the highest quality white clover leys. And modern high-yielding short-term red clover ley mixes can provide annual yields of around 10 t/ha DM. Upland yields will depend on the nature of the grass and local climate but careful improvements made over time to encourage clover growth, where appropriate.