



Ryegrass and clover/herb mixtures

Technical Note F20

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|----------------------|-------|
| Management level | ★★★★★ |
| Yield | ★★★ |
| Quality | ★★★★★ |
| Water use efficiency | ★★ |
| Reliability | ★★★ |
| Versatility | ★★★ |

Where ★★★★★ is the highest rating.

Purpose

Higher nutritional value than high density ryegrass and less need for nitrogen fertiliser. Requires more management skill than pure ryegrass pasture. Highly nutritious forage from June to November and can carry up to 5 milking cows/ha during this period.

Establishment

Pasture can be sown from mid April to mid May. A fully prepared seedbed is necessary to establish these mixtures. Seed is spread on the surface at 5 - 10 kg ryegrass/ha, and 4 - 5 kg/ha of mixed clover and herb seeds. Legume seeds must be inoculated with the appropriate inoculants. Rolling is essential. If sowing onto acid soil pelleting seed with lime and molybdenum is advantageous.

Early sowings are more prone to summer grass and broadleaf weed invasion, and late heat waves can kill seedlings. Later plantings are slow to establish. Perennial ryegrass varieties are sometimes used to lessen competition with the clover, but these ryegrass plants fail to persist during summer.

Water use

Amount of irrigation available is a primary consideration. Need a minimum of 4 ML/ha and able to apply small amounts of 5 - 10 mm each 3 days during establishment. Irrigate each 3 to 4 days for 4 weeks to ensure establishment, then often enough to avoid wilting, every 7 to 20 days depending on location and soil type. Frequency

increases substantially as temperatures rise in spring.

Soil fertility

Less tolerant of acidic and low fertility soils than high density ryegrass. Fertiliser inputs are based on soil tests although clovers tend to have a higher K requirement compared to ryegrass. Adequate fertiliser is essential to the pasture performance. Clovers require a soil pH above 6, and on acidic soils liming may be needed every 3 to 5 years to increase the pH.

Common practice is to apply 125 kg/ha muriate of potash, 250 kg/ha superphosphate and 125 kg/ha urea at planting, and 125 kg/ha urea after each grazing. With strong clover content nitrogen application may not be warranted after the first or second grazing without a decline in DM production. In total these mixed swards require 375 to 500 kg urea/ha/year.

Diseases and pests

There are few pests of importance, and grazing often is sufficient for control.

Growth and grazing

Grazing commences in 8 - 10 weeks or before ryegrass shades the clover. Normal practice is to graze in a rotational system, using a front and back fence. Grazing is managed to encourage clover growth early in the season, by removing ryegrass cover and leaving a high residual, about 15 cm. Later in the season the objective is to maximise yield of clover or herb, and grazing is delayed until forage yields are high and animals removed when the residual height is approximately 15 cm. In practice the rotation varies from 20 - 40 days.

Pasture yield is typically in the range 6 - 12 t DM/ha. Often higher yields are the result of earlier and later grazing in autumn and spring respectively.

Forage quality is very high, with similar CP to ryegrass, but lower NDF (30-35% DM) content and a higher intake factor associated with legumes.

Weeds

Broad leaf weeds can be a problem as they compete with the clover and are difficult to spray as most effective chemicals also damage the clover and herbs. 2,4-DB can be used effectively once clover have 3 fully formed trifoliolate leaves. A persistent weed problem may be best controlled by growing high density ryegrass.

Animal health

Bloat is the major concern. The prevalence of bloat can be reduced by avoiding grazing hungry cows. Bloat oils can be sprayed onto pasture at 60 - 100 ml/cow/day, cows can be drenched with 20 - 40 ml of bloat oil/cow/day or rumensin capsules could be inserted into the rumen and remain effective for 100 days. Alternatively and more commonly, rumensin can be mixed into the bail feed at 20 mg/cow/day.

Nitrate poisoning is less likely than with high density ryegrass. However cows can exhibit signs of hypomagnesaemia. Loose faeces, nutritional scours, often occurs during winter when grass is very digestible, but rarely has any negative effects on production.

A high ryegrass content of over 50% of the sward will lessen the risk of bloat, though not remove it.

Silage and hay

A ryegrass and clover mixture makes excellent silage, cut and wilt the pasture to 35% DM, baled and wrapped or pit.

Excess amounts of pasture available for ensilage are very rare, even more so than for high density ryegrass.

Further information

Contact the DAFF Customer Service Centre by Phone 13 25 23, or Email callweb@daff.qld.gov.au

More technical notes can be found at: www.dairyinfo.biz

Lake (1995). Dairying Technical handbook.

Launders et al. (2010). Annual, Italian and short rotation ryegrass varieties 2010.

Callow et al. (2013) Successful Dairy Production in the Sub-Tropics

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