

tips & tools

NATURAL RESOURCE MANAGEMENT



Strategies to boost productivity of native pastures

Perennial native pastures modified by combinations of subterranean clover and superphosphate (sub-and-super) can be very productive, particularly when rotationally grazed. The challenge is to find a balance that protects the perennial native grasses from increased competition and grazing pressure.

Seasonal tactics

Autumn

After the autumn break, use tactical grazing to maintain pastures above 1,000kg DM/ha and encourage native grass growth to suppress annual weeds. Achieving a balance requires careful monitoring of the germination of perennial native seedlings, clovers and annual grasses.

Where there is heavy germination of annual grasses (particularly following heavy seed set in the previous spring), high-density short-term grazing tactics ensures annual weeds do not dominate.

When there is good sub-clover germination among native grasses defer grazing for 6–8 weeks to allow native perennial grasses to grow and compete against clover and annual grasses.

Following years when seed set in native grasses has been high (usually with wet summers), defer grazing for up to six weeks to encourage new seedling growth.

Winter

Continue moderate grazing pressure ideally to maintain pastures above 1,000kg DM/ha. Grazing below this level may be required to meet livestock production benchmarks and sustain higher winter stocking rates, but this will result in lower winter and spring growth rates.

Spring

Increase grazing pressure in early spring to help control growth of clover and annual grass weeds, while still allowing some clover to set seed.

Reduce grazing pressure or spell in late spring every few years to allow native grasses to seed (unless annual grass

Key benefits

- Using seasonal management tactics can boost the productivity of native pastures.
- Applying fertiliser can maximise the benefits to native pastures.
- Managing stocking rates and grazing pressure can promote pasture productivity.

weeds have not been controlled throughout the year).

In high growth years, graze heavily to use green feed and promote sub-clover flowering.

Maintain grazing pressure on summer growing species to encourage leafy growth. This will improve feed value and keep roots active during summer, increasing the opportunity to trap nitrogen and slow soil acidification.

Summer

Maintain ground cover above 70% (80% on ridges and erosion-prone slopes) to reduce the development of bare spaces that encourage annual weeds and noxious perennial grass weeds including serrated tussock and Chilean needlegrass.

Manage the grazing pressure in summer rainfall areas to maintain pastures around 1,000kg DM/ha, preventing the build-up of rank growth in the autumn.

Plant facts

Fertiliser use

In their original state, native grasslands operate in a low nitrogen situation. Native legume content is low and because of lower grazing pressures most nitrogen is tied up in low quality dead plant material.

The use of sub-clover and superphosphate in native based pastures increases the quantity and quality of green forage in winter and spring. The phosphorus and sulphur in

superphosphate help increase legume (clover) growth, providing high value feed as well as increasing soil nitrogen for increased grass production.

Sub-clover and superphosphate can improve the health of the ecosystem by boosting soil microbial activity and earthworm numbers. Plants receiving high levels of nutrition produce high quality litter, increasing soil organisms. High levels of soil microorganism activity result in high rates of mineral nutrient cycling and increased availability of mineral nutrients, even where total nutrient levels in the ecosystem are not high.

Cool season, winter growing grasses, such as wallaby grass and weeping grass, generally respond well to fertiliser. Warm season grasses such as kangaroo grass do not respond as well. At moderate fertility levels, warm season grasses that are active through summer provide a valuable role in taking up nitrogen from legumes.

If the perennial grass component of native pastures declines, excess nitrogen produced by the clover can lead to weedy pastures or acid soil.

Under high fertility conditions, exotic annual grasses are highly competitive and can interrupt the cycle of native grass seedling recruitment due to the high density of weed seedlings.

Overuse of fertiliser in native pastures can result in invasion of annual grasses, loss of biodiversity and loss of ground cover through dry periods.

Management tips

Achieving a healthy balance of legumes in native grass-based pastures means careful application of fertiliser and stocking rate control (rotational grazing), particularly in favourable seasons.

Stocking rates and grazing pressure

Increase stocking rates to ensure that legumes and annual grasses do not dominate. Graze heavily in spring to use green feed, promote flowering of sub-clover, and control annual grass.

Rest pastures at critical times (depending on target species and rainfall pattern) to encourage seeding of

perennial native grasses. Limit grazing pressure (when annual species decline – late spring to autumn) to prevent overgrazing of perennial native grasses. Avoid overgrazing in dry summers, and in good years avoid rank growth in autumn.

Further information

For further assistance contact your local pasture or livestock advisor, or go to www.mla.com.au/publications to search for other MLA publications on grazing and pasture management.

Fertiliser use

The careful use of fertiliser is the key to increasing the productivity of native pastures. Native grasses are adapted to lower soil fertility conditions and respond slowly to superphosphate. Increase soil fertility slowly by starting with very low rates of superphosphate (less than 50kg/ha) to maintain the pasture species balance. Low to moderate rates are better (less than 100kg/ha) because this allows growth to be utilised or controlled.

Apply fertiliser to native pastures with a high content of legumes and perennial grasses.

Weed control

Native grasslands and native pastures are especially vulnerable to the invasion of perennial grass weeds including serrated tussock, Chilean needlegrass and African lovegrass, which must be controlled to maintain productivity and biodiversity.

Types of native grasslands

High quality native pastures with low nature conservation value – pastures dominated by wallaby grass and weeping grass with a medium to high grazing and fertiliser history. On good soils, fertiliser encourages legume growth producing a highly productive pasture.

Moderate quality native pasture with low nature conservation value – pastures dominated by wallaby grasses, spear grasses, tussock grasses and red grass. Moderate productivity, but areas of bare ground allow annual grasses and weeds to invade, especially when fertilised.

Relatively unaltered grassland with high nature conservation value – dominated by kangaroo grass with a rich diversity of other species. Conservation value may be reduced with any form of disturbance, including fertiliser.

Acknowledgments

Denys Garden, NSW Agriculture, Canberra; Greg Lodge, NSW Agriculture, Tamworth; Kathy Junor, technical editor



Level 1, 165 Walker Street
North Sydney NSW 2060
Ph: 02 9463 9333
Fax: 02 9463 9393
www.mla.com.au