SOWN PASTURES AND LEGUME PERSISTENCE: AN AUSTRALIAN OVERVIEW

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SUMMARY

Recent trends in sown pasture development, the changing pasture production environment, and the current persistence status of important temperate and tropical legumes in Australia are broadly reviewed. Since 1970, a sustained decline in farmer's terms of trade and rapid changes in the relative profitability of livestock and cropping enterprises have directly or indirectly influenced the persistence of many pasture legumes. Reduced P fertilizer use, over-grazing, expansion of crop areas, and the introduction of new cropping technologies are implicated in the decline of legumes. Land degradation problems have also emerged and include soil acidification, salinization, waterlogging, and compaction. Occurrence of new diseases and insect pests, or increased prevalence and severity of those previously known, has substantially affected the persistence of subterranean clover (Trifolium subterraneum L.), annual medics (Medicago spp.), lucerne (Medicago sativa L.) and stylosanthes (Stylosanthes spp.) in recent years; these are key species used in Australia over a wide adaptational range. Major factors limiting persistence of each important legume are briefly documented.

PERSPECTIVE

Sown Pastures in Australia

Historically, the most important feature of Australian agriculture has been the evolution and expansion of sown pasture technologies (Donald, 1965). Commencing in the 1920s, the sown pasture revolution accelerated after 1945 and peaked nationally in the early 1970s at 28m (million) ha (ABS). The area subsequently declined to a low of 24m ha in 1981 but has since steadily returned to near 28m ha in 1987. About 85% of the present development on an area basis is in southern Australia (23.5m ha) with most of the balance (4.5m ha) in Queensland (Table 1). These statistics substantially underestimate the total area of land on which sown pastures are grown because they exclude ley pastures that are under crop. They also exclude the extensive areas where introduced species have become naturalized.

Menz (1984) projected a potential area under sown pasture each year for Australia approaching 30m ha, claiming limited remaining scope for expansion in southern Australia and little immediate opportunity for new development in northern Australia. However,