Free enterprise farming in grasslands in central NSW, Australia

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Abstract

A pathway is described in developing and improving the pastures on family-owned sheep and beef properties at sites near Blayney in central NSW. Initially, the twin approach of sowing perennial grasses, predominantly phalaris (Phalaris aquatica) with subterranean clover (Trifolium subterraneum) plus the recommended addition of superphosphate fertiliser, was closely followed but within a decade ill-thrift in pastures and livestock occurred. Once the core problem of soil acidity was recognised, steps were taken to overcome this constraint with applications of lime. However, an additional modification involving the application of gypsum with lime had to be sorted out and applied. This approach is explained. An important part of the problem is a consequence of many landowners not understanding the basic principles of plant and livestock nutrition, an unwillingness of some research/extension agronomists to recognise the expertise of successful producers, and the implementation of various farmer subsidy and support schemes that appear to reward dependent producers rather than encouraging independence.

Introduction

This paper records the progress of the Green family as landowners, graziers, animal producers and merchants in high-rainfall, grazing lands of central NSW (800 mm annual rainfall, 1000 m elevation).

Green family - timelines and milestones

Pre-1820 – Aboriginal land managers (hunter-gatherers), native animals and fire shaped the landscape.

1820-1920 – White settlers and sheep squatted on land before the land was surveyed, allocated and acquired. Much of the tree cover was cleared for grazing and holdings were progressively fenced. The Federation drought reduced Australian sheep numbers by 32%.

1922-1956 – Land acquired by John and Annie Green. Further clearing and fencing. Droughts, the 1930s depression and rabbit plagues impeded progress. Developed a stock water system. In the early 1950s, aerial agriculture aided grassland improvement with subclover and superphosphate. George and Jessie Green took over in 1956.

1968-74 – Des Green married Sally Crofts and took over “Rhondda Villa” from Des’s parents – a planned succession. Continued pasture improvement with P, S and Mo fertilisers and direct-drilled phalaris + subclover. Paid off the farm, bought a further 160 ha and raised three children (Stuart, Alison and Joanne).

1974-1984 – Tackled challenges, in particular the serious problem of clover ill-thrift, characterised by conflicting information on the cause. After many discussions and consultations, Des had nutted out a solution (liming) to the problem (soil acidity). Bought another 160 ha.

1984-2008 – On-farm and off-farm businesses reorganised and consolidated. Targets set for soil pH, Al³⁺ and soil P. Liberal use of lime + gypsum. Secured cheaper sources of lime (slurry by-product) and gypsum (recycled plaster board). Developed sideline businesses such as contract seeding and spreading, purchased a local farm supply business and the family bought more land.

2008-2020 – A consolidation phase, marked by the implementation of another succession plan, with son Stuart and wife Gemma taking over the majority of the grazing business, and daughter Joanne and husband Mark purchasing the rural merchandise business.

Productive pastures

As in many parts of Australia, the problem of clover ill-thrift is a consequence of the increasing acidity of soil profiles, caused by the export of farm produce (loss of alkali), the oxidation of organic matter to NH₃, and NO₃⁻, and the leaching of N from the topsoil.

In 1975-85, Des Green, frustrated by the confused messages from researchers and advisers on the causes and solutions, sought and found his own solutions. He sourced, sold, used and advocated the use of a 2:1 lime + gypsum mix applied at 2.5 t/ha to achieve and maintain targets of a soil pH (CaCl₂) = 5.5, Ca²⁺ = 60-80% of CEC, low Al, moderate soil P = 20-30 ppm (Colwell). Lime raises pH, reduces Al and unlocks P. On soils with a topsoil pH of 4.5-6.0, gypsum counters any sodicity, improves soil structure, may drive Ca deeper and adds sulfur (correcting S deficiency and needed for OM accumulation).

At least on the NSW Tablelands, confusion continues about pasture nutrition and management. The knowledge bank on soil management needs constant updating on topics such as pH stratification, ion movement from topsoils into subsols, the suitability of various soil types to lime and lime + gypsum, and levels of major and minor nutrients. Advisory services must advocate proactive rather than reactive approaches.

Maintaining the right species on their farms

Phalaris + subterranean clover is the core pasture. Phalaris is sensitive to acid soils but, once established, it is persistent, survives droughts and competes with weed species. Lime + gypsum, with strategic applications of molibdenised superphosphate, are applied every 3-5 years on the farms family, clients and adopters. Des and Stuart avoid overstocking, ploughing, clearing and other practices that create ‘vacant spaces’ – paddocks are rigorously inspected and perennial weeds (blackberry, serrated tussock) are spot-sprayed with a unique procedure that utilises herbicide synergy.

Diversification and succession

The Green family set up a range of sideline businesses to create enterprise diversity, control farm inputs and generate cash. They provided contract and hire services for soil testing, fertilising and pasture establishment, buying and operating a rural merchandise and fuel depot, which stocks a full range of rural supplies.

Stuart & Gemma Green, with Des & Sally, now operate sheep and cattle fattening on 2225 ha + leased land, while Jo & Mark Richardson own and manage the rural supply business and their farm.

Conclusions

Members of the Green family are proud of and grateful for the agricultural, environmental and personal successes they have achieved. They look forward to the future with confidence and happiness. The Green family seeks little help from government other than maintaining the free enterprise platform. They recognise the role of government in basic services, market reports, weather forecasting, R&D investment, providing assistance only in extreme conditions (fire, flood and long-term drought). They are discussing a succession plan for the third generation.

Finally, the family are active participants in and supporters of local, national and/or international grassland conferences, which promote and explore issues affecting grassland husbandry; share methodologies, ideas and information; encourage the adoption of relevant research results and industry experience; and document the impact of research on grassland industries.

References

Please refer to our paper in the Proceedings.