

Balancing pasture feed supply with animal demands during pasture development and in time of drought

F.C.Crofts

University of Sydney Farms, Camden, N.S.W., 2570.

Successful economic pasture improvement depends largely on appropriately matching increased productivity with increased stocking pressure. To do this successfully, farm managers have to interpret research results (1,2) and then draw up plans for both pasture improvement and increased livestock numbers. The following twelve-year plan for a 500 hectare non-arable hilly property with elevation between 500 and 720 metres and A.A.R. of 600 mm, near Bathurst on the Central Tablelands of N.S.W., was made in 1966.

Methods

The cleared native pasture, which was dominated by Bothriochloa but included some Danthonia and Trifolium annuals, had an estimated carrying capacity of 2 DSE/ha and grew on a skeletal soil of pH 5.6 to 6.0, derived from slates and diorite.

The development plan provided for aerial rabbit baiting, then applying Mo and standard superphosphate at the rate of 120 kg/ha with sub-clover seed (Marrar+ Daliak) at 2 kg/ha each April by aerial topdressing, and adding 5 DSE in

December for each tonne of fertiliser applied the previous April (300 DSE/ 60 t).

After 10 years and 600 t of superphosphate, the stocking rate had moved from the original 2 DSE/ha (or 1,000 wethers) to 8 DSE/ha (4,000 DSE as breeding sheep and cattle). Thereafter, from 1976 onwards, superphosphate topdressings (after the total build-up to 1,200 kg/ha) were applied at an average rate of only 60 kg/ha to maintain existing P and S levels.

For the first two years of the improvement programme the farm was stocked exclusively with dry sheep, but as pasture quality improved, breeding sheep and cattle were introduced. From 1974 to 1978 the carrying capacity was divided equally between sheep and cattle, managed on a six-month changeover basis and minimal use of anthelmintics.

A bushfire in November 1979 and the 1980 autumn drought caused the sale of all cattle at reasonable prices. The property is now operated as an all-sheep enterprise. Half the carrying capacity is taken up with breeding ewes and the balance as drystock which can be disposed of on favourable terms in the event of drought.

Results and Discussion

The farm-scale trial, conducted over 15 years, showed that this method of pasture improvement, which is applicable to large areas of rugged country in the tablelands of N.S.W., was simple, cheap, easy to finance, flexible, easy to manage, and profitable. Furthermore, it was a low-risk, low-investment, low-labour system which could be financed largely from income and did not cause any problems in livestock health.

After 15 years of superphosphate application, the pastures generally contain a mixture of native perennial grasses (winter and summer growers) plus winter annual clovers, dominated by subterranean clovers. Some thistles and barley grass are invading the sheep camps, but these can be easily controlled, as required, by the use of solar-electric sheep fencing, herbicides, and the surface seeding of strong winter-growing grasses like Phalaris.

I believe that this is still the best route to pasture improvement for graziers holding this kind of land who do not have resources of capital for large-scale rapid development.

1. Kinsman,K.L.,& McLennan,L.W.,1961.Quart.Rev.Agric.Econ.14:(4):188-198

2. Anon.May 1968.Wool Economics Res.Report No.12 - B.A.E.Canberra.