

MANAGING SOILS FOR BETTER PASTURES:

A SUCCESSFUL FERTILISER STRATEGY ON THE SLOPES

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Abstract: This paper reports my experience and results of topdressing and pasture improvement on our property "Hillgrove", Coonabarabran over 40 years. Our first efforts in 1969 were not successful, but encouragement from our district adviser, the development of shorter-seasoned legumes, and the productivity increases demonstrated by farmers who were early adopters of the technology caused us to get serious about pasture improvement in 1980. A basic strategy of sowing subclovers and serradella and topdressing with P and S fertilisers has changed the whole operation and appearance of our property. Our stocking rate has increased to >1 breeder/2 ha, and steer growth rates by 133 kg/steer/yr.

INTRODUCTION

I remember going to an agricultural meeting in the 1950's at Purlewaugh and the then local agronomist talked of the possibility of pasture improvement in our area based mainly on the application of single superphosphate. However, the improvement seemed to be applicable only to the red Kurrajong country in our area. The country had to be "get-at-able" with tractor, plough and combine. It was in the days of black and white slides. He showed a slide of country very much like ours - fairly steep, plenty of rocks the size of half wool bales and bigger, covered with red grass, that nothing would eat. The slide showed all this plus 3 horsemen on a steep slope supposedly looking for a mob of fly blown poor merino weaners. We had plenty of them.

The agronomist told us quite clearly that there was no foreseeable future for pasture improvement in this type of country. Our family had thousands of acres of this exact same land. In fact I came away feeling quite happy. Topdressing with superphosphate was very expensive, a lot of work and we did not have to do it because it was considered by the experts to be inappropriate. However, in hindsight, we did make some very poor attempts to plough up the rocks and get some pasture established. The results were not encouraging.

"Hillgrove" is situated on the edge of the Pilliga scrub. The average annual rainfall is 675 mm. Soil types range from light sand, sandy loam, red Kurrajong to heavy basalt soils. In the 1950's, my father was in partnership with his brother. He ran 5,000 merino sheep over about 2,400 ha. They were not big framed sheep but cut about 3.6 kg wool/head. Fifty head of shorthorn cattle were run to eat the Darling Pea. This they were expert at - very rarely getting fat - never any bloat problems and if they did have calving problems, we never saw them.

My Dad's experience was that you could get your stock to the 30th June O.K., but after that look out, because July,

August and September were absolute hell and we learnt to hate these months.

EARLY ATTEMPTS AT PASTURE DEVELOPMENT

Initial disaster

As youngsters, we cleared all the timbered area between the dense Pilliga scrub and basaltic red country. We raked it, burnt it off, ploughed it and attempted to grow wheat. It was not long before it was evident that before clearing we had millions of trees standing up on sand, after clearing, we had just acres and acres of sand. It was good that we were young!

A Second Chance

Our so called improvement program went into limbo for quite a lengthy period when a bright light appeared on the scene. In 1967, a new Department of Agriculture agronomist with a completely new outlook arrived at Coonabarabran. Apart from being hard working and enthusiastic, he had the patience of Job and slowly persuaded us to try top dressing from the air with new varieties of subterranean clover. This was backed up by the Department sowing a series of pasture trials and demonstration blocks across a lot of different areas in the Coonabarabran district.

We launched out in 1969 with a very timid attempt, using sulphur fortified superphosphate at 125 kg/ha over 810 ha. We waited for a jungle of pasture to spring up and it did not appear. The people who knew said you can see the improvement in the livestock due to improved forage quality. I could not see much difference, so we put it down as a straight donation to the fertiliser company. The local agronomist still persisted with his encouragement - we looked upon him with much caution.

We then bought a small adjacent property from a grazier

who had done a lot more work on aerial top dressing than we had. This property had twice the carrying capacity of ours, and the soil appeared the same as ours. So in 1980, we got serious about improving our country.

A NEW STRATEGY FOR PASTURE IMPROVEMENT

By 1987 we had developed a sound program. We had used subclover before but during a tough season the older, long-seasoned varieties would not persist and disappeared. These new varieties hung on and soon built up large seed reserves in the soil. We have not had to thicken them up.

The basis of our strategy has been:

1. The use of short seasoned subclovers such as Dalkeith, Junee and Seaton Park (1.1 kg/ha of each), plus Haifa white clover at 0.3 kg/ha;
2. The addition of serradella especially in the light textured sandy country;
3. Topdressing basalt soils with 125 kg/ha of sulphur fortified superphosphate every three years; and,
4. Topdressing light textured sandy soils with 125 kg/ha of single superphosphate every year.

The end result of development has been:

- We were running 100 breeders (cattle) on 4,050 ha. My family now run 1200 breeders on 2,025 ha. We sell the steer portion off weighing 500 kg minimum at 18 months. Before development, we had difficulty getting them to weigh 400 kg at 2 years of age.
- We do not grow oats or barley crops to fatten out stock. It costs just a little over \$42.00/ha to topdress by air, and I can not grow a decent oat crop under \$173.00/ha. In addition, the more cropping the more soil erosion we have to contend with. We do grow

grain crops, but we undersow lucerne and use the grain to top off steers.

- I spoke earlier about a predominance of red grass. We have gone through, or are going through, a period of clover dominance and have some very severe losses from bloat. During these times we like to see that rank, tall grass with a floor of clover around its feet, and so do the cows.

CONCLUSIONS

I am certain in my own mind that you have to develop a sound pasture and fertiliser program and stick to it. Even when seasons and cash flow are tight, do your best to carry it through. If you let your program lapse, it can be very costly. I believe a well-planned pasture program is like a big heavy iron wheel on a shaft - it is very hard to start to turn but once you get it turning, it is not hard to keep turning.

Although we have had a program going since 1988, I estimate that we have barely reached 70% of our maximum carrying capacity, and there would be a lot of properties in the Coonabarabran area running at only 50% of their potential. This is because you spend a large amount of money initially and see very little return. It probably takes 3 to 4 years before you start to get a decent seed build up and a return on your investment.

Remember it is a lot cheaper to double the stocking capacity by top dressing than purchasing another property the same size as the one you are operating. There are not many income tax deductions on a new property and twice the area and fencing to look after. It is very simple to aerially topdress, each year with fertiliser. It eliminates much of the hard work and need for long tractor hours.

After going through a very dull grazing period, it has suddenly become exciting, enjoyable and most importantly, rewarding financially.