

## PLANT NUTRITION:

## Fertiliser protects your soil by increasing ground cover

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Maintaining adequate ground cover increases water infiltration and therefore reduces run-off and decreases erosion. Soil loss increases rapidly once plant ground cover falls below 70% (Lang 1992). The aim of this trial was to observe the effect of fertiliser on ground cover.

## Methods

Ground cover was assessed on 23.1.95 from eight, 10 cm square quadrats per plot. Each count was taken from a fixed area to eliminate bias. The assessments were estimates of any plant material, living or dead, given as % ground cover. They were taken on trials established in 1987 on a red clay soil near Tamworth to measure fertiliser responses from natural pastures. At sampling, the pasture consisted of blue grass, *Danthonia* and wiregrass, but no legume.

## Results

Results show that unfertilised natural pasture at this site has less than 50% ground cover and that this can be increased to over 80% with a reasonable fertiliser program (Table 1). Even fertiliser last applied in 1987 or 1989 (at high rates) increased ground cover over the nil treatment as well as virtually doubling yields. There was a good correlation between pasture ground cover and yield.

Ground cover did not make 100% because no legume was present and the preceding 12 months had been extremely dry. Also grasses present were clumpy and upright growing leaving areas of bare

**Table 1.** Effect of fertiliser on yield and ground cover of a native pasture on a red soil at Tamworth.

Fertiliser		Ground cover (%)	Yield (kg/ha)
P	S		
Nil		49	240
80	0 in 1987	64	520
0	25 in 1987, 88, 89	66	400
10	25 yearly	83	1320
20	25 yearly	88	1920
LSD		14	844

soil. Ground cover can be 100% in spring with annual legume growth. However, where little or no fertiliser is applied, there is little legume growth at this infertile site and so ground cover does not greatly improve, and is still below the critical level of 70%. Ground cover figures in summer are very important as this is the time of heavy storms which cause the biggest run-off and erosion problems.

## Conclusions

Feasible rates of annually applied fertiliser significantly increased ground cover to above the critical level of 70% and greatly increased yields, even in these dry times. The maintenance of adequate ground cover in summer is important to protect the soil from run-off and erosion caused by summer storms.

## References

- Lang, D. (1992). Linking soil, pastures and livestock in pasture management. *Proceedings of the Seventh Annual Conference, Grassland Society of NSW*, p. 93.