

Perennial Pastures - Hidden Benefits Unearthed

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Introduction

We usually think of pasture production and the benefits of a good stable pasture in terms of kg/ha and then \$'s, but a view of % cover reveals a range of additional benefits which can also be translated into dollars and increases in production

Percent Cover

Research conducted by the Soil Conservation Service at Scone has unearthed some interesting and important effects of fluctuating pasture cover on soil stability, soil nutrients, and water; factors which are the foundation stones of our grasslands, and their productive capacity.

When the amount of run-off and soil lost from a hillslope was related to % ground cover, a family of curves was obtained with critical cover values of about 70%. Run-off and soil loss were slight where cover exceeded this value, but increased rapidly when cover was reduced below 70%.

Poor Cover

With 30% cover, for example, surface run-off averaged 125 mm per year. This was equivalent to almost 25% of the annual rainfall which was lost for plant growth. Run-off removed on average, about 6 mm depth of soil each year, an amount equivalent to 250 semi-trailer loads of soil from a 100 ha paddock. This often represents the best soil for plant growth because it is high in nutrients and organic matter, and is well-structured. Lost soil often ends up in dams and rivers at a substantial cost to the producer and society.

In addition, the bare ground spaces provided an ideal environment for weeds to germinate as nature tried to heal the scars resulting from an unstable pasture base.

Good Cover

With at least 70% cover, in contrast, most of the rainfall infiltrated into the soil and was available for plant growth - a critical point in a country where water is the most limiting factor for agricultural production. Deep-rooted perennial grasses and legumes are the key to utilizing this extra available water, and maximising the productivity of the pasture.

The water which did run-off was mostly clean, leaving the soil particles, nutrients, and organic matter on the hillslope where they belong, and out of dams and rivers.