

SEASONAL GROWTH RATE OF STEERS IN RELATION TO THE STYLO PERCENTAGE OF THEIR DIET

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In the dry tropics animal production from native grass pasture is often limited by an inadequate supply of energy, nitrogen and some minerals. Legumes often contain higher concentrations of energy and nitrogen (Romero and Siebert 1980) than do native grasses, and their main contribution in pasture mixtures lies in their potential to improve the nutritive value of the diet selected by grazing animals. We report the relationship measured between seasonal growth rate of five groups of six Brahman cross steers, continuously grazing a native pasture oversown with *Stylosanthes scabra* cv. Seca (stylo) at a stocking rate of one steer/4 ha and the stylo content of the diet estimated by additional fistulated steers. Continuously grazed steers were replaced each year in April with steers whose average liveweight was 291 ± 4.8 kg and 327 ± 4.7 kg in 1985-86 and 1986-87 respectively.

The study forms part of a grazing experiment in northeast Queensland where pastures were established on soils with low bicarbonate extractable phosphorus (range 1-3 ppm) and fertilized with superphosphate rates up to 250 kg/ha. Pasture legume yield varied from 50-1800 kg/ha (1-46% of total pasture) and diet legume from 10-90% with increasing superphosphate application. Diets were sampled ever 6 weeks for 2 years by grazing eight oesophageally fistulated steers for 30 minutes in early morning. Diet legume components (corrected for weight per unit area) were estimated using a microscopic point hit method (Hamilton and Hall 1975). Results have been aggregated into three seasons, wet (November-April), transition (April-June), dry (July-October).

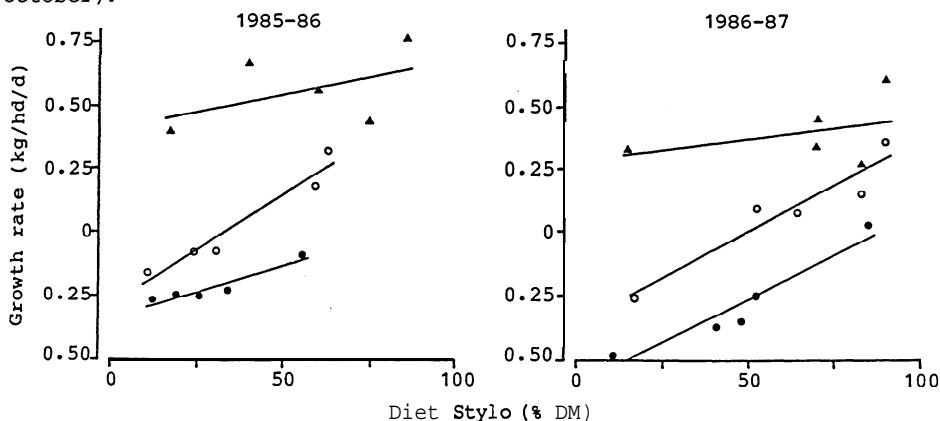


Fig. 1. The relationship between growth rate and the percentage stylo in the diet for the wet & transition and dry seasons.

Growth rate was linearly related to the percentage stylo in the diet in the transition and dry seasons ($P < 0.05$) but not in the wet season. One explanation for the lack of correlation in the wet season is that a dietary phosphorus deficiency was the first factor to limit growth rate. To clarify this result the effect of phosphorus supplements on diet composition is currently being examined.

HAMILTON, B.A. and HALL, D.G. (1975). *J. Br. Grassld. Soc.* **30**: 229.

ROMERO, A. and SIEBERT, B.D. (1980). *Aust. J. Agric. Res.* **31**: 393