

Chicory: A New Forage Herb for the New South Wales Central Tablelands and Slopes

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Introduction

Chicory is a perennial herb of the family, Asteraceae, which appears to have considerable potential to bridge the summer/autumn feed gap. It is commonly observed along roadsides throughout the Orange district.

The New Zealand-bred cultivar, "Grasslands Puna", has been included in a legume evaluation trial, established in 1989, at the Orange Agricultural Research and Veterinary Centre. The experiment aims to determine the most productive pasture forage species for the central tablelands and slopes of New South Wales.

Methods

Twenty-eight pasture cultivars, including "Puna" chicory, white, subterranean, caucasian, balansa, strawberry and red clovers, murex medic, lucerne and lotus, were sown in a simple mixture with phalaris.

The soil at the site is derived from basalt, with a pH (CaCl₂) of 4.3. Rainfall during the year was above average over the autumn and winter months, and was considerably below average in summer.

Broadleaved weeds were controlled with several applications of 2,4-DB herbicide in all plots, excluding chicory.

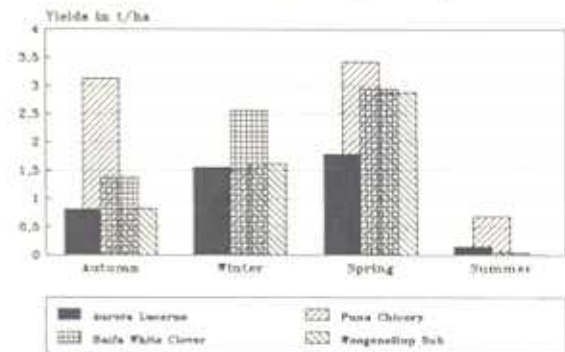
Harvests were taken every six weeks, dry weight and botanical composition were recorded, and then the plots were grazed by sheep.

Results and Discussion

Dry matter yields to date have been summarised in the graph. This shows that, for the year beginning March, 1990 (that is, from the Autumn break), "Puna" chicory outyielded three common legume species in all seasons except winter. Yield was especially, significant during the dry 1990/91 summer.

The main growth period for chicory is over the summer months. Growth rates depend upon rainfall,

Yields of Puna Chicory Relative to Three Common Legume Species



Year began 02/03/1990, ended 11/03/91

and can be very high (Hare and Rolston, 1987). Two problems arise from these high growth rates. First, when flowering, much of the dry matter accumulated may be coarse, unpalatable stem, and, second, to attain high growth rates, a high level of nutrition is required, especially nitrogen (Clark *et al.*, 1990b). Experience to date suggests that chicory should be grazed similarly to lucerne. Rotational grazing every four to six weeks over summer ensures the persistence of the individual plant, minimizes the production of stems (Clark *et al.*, 1990b), and maximizes the yield of the high quality leaf portion (Clark *et al.*, 1990a). Chicory will grow well in mixed swards with legumes. In winter, it is best to avoid heavy grazing in pure swards, as the dormant plants could be damaged by trampling, allowing pathogens such as *Sclerotinia* to invade (Green, pers. comm.)

With appropriate levels of management, this strongly tap-rooted species may prove to be of great value as a palatable, nutritious source of green forage for domestic livestock over the summer and autumn periods.

Hare, M. D. and Rolston, M. P. (1987). Effect of time of closing and paclobutrazol (PP333) on seed yield of "Grasslands Puna" chicory (*Chicorium intybus* L.). *New Zealand Journal of Experimental Agriculture*, 15:405-410.

Clark, D. A., Anderson, C. B. and Hongwen, G. (1990a). Liveweight gain and intake of Friesian bulls grazing "Grasslands Puna" chicory (*Chicorium intybus* L.) or pasture. *New Zealand Journal of Agricultural Research*, 33:219-224.

Clark, D. A., Anderson, C. B. and Berquist, T. (1990b). Growth rates of "Grasslands Puna" chicory (*Chicorium intybus* L.) at various cutting intervals and heights and rates of nitrogen. *New Zealand Journal of Agricultural Research*, 33:213-217.