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PERSISTENCE OF GRASSLANDS HUIA WHITE CLOVER (Trifolium repens L.) IN HILL COUNTRY PASTURES

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Abstract

Six hundred plants of a form of 'Grasslands Huia' white clover with a feathermark red mid-rib leaf marking were planted into north aspects on six hill country farms in southern North Island and their performance monitored over four years.

Although the plants established well, numbers rapidly declined during the second year, particularly during the dry summer months. Only 12% of the plants remained at five of the six sites after three years. After four years, only one site still retained a significant quantity of the feathermarked Huia, this being a dry site grazed predominantly by cattle during spring.

Few Huia plants appeared to be adapted to hill country pastures, Other possible reasons for the lack of persistence in Huia in this trial include livestock treading, especially at wet sites, and pasture pests porina caterpiller and nematodes.

Keywords: white clover, persistence, hill country, grazing management, leaf mark, adaptation, pests.

INTRODUCTION

During the past 40 years 'Grasslands Huia' white clover (Trifolium repens L.) has been used widely for oversowing hill country pastures in New Zealand. However this intermediate-leaved cultivar was bred for use in high-fertility lowland (Williams 1983). and even the first New Zealand assessment of the species by Davies & Levy (1931) indicated that small-leaved types were more prevalent on poorer land grazed mainly by sheep. This was confirmed by Suckling & Forde (1978) who, in evaluating material of white clover collected from moist hill country farms during the early 1970s, found that Huia had failed to persist after oversowing (Forde & Suckling 1977), even after 20 years of regular fertiliser application and high standards of grazing management. Elimination of large-leaved white clover was also noted in the uplands of Wales (Davies 1962) and under hard grazing management in New Zealand (Lancashire 1974).

The availability of a selection of Huia with a distinguishing leaf-mark, has enabled Huia's persistence to be studied under a range of hill country situations. This 'feathermark' form of Huia was bred by Corkill (1963) for such purposes, being homozygous for a red mid-rib leaf marking, but agronomically similar to Huia (W.M. Williams, pers comm). This paper summarises the performance of feathermark Huia during 1979-1983 in wet, moist and dry hill country under various grazing managements.

MATERIALS AND METHODS

Trial sites on hill country farms were selected in collaboration with Ministry of Agriculture and Fisheries advisory staff. Two sites were in wet hill country, at Makuri (thereafter Wet 1) and Coonoor (Wet 2) in North Wairarapa, in an area with a normal soil moisture surplus of IOO-200mm during the growing season (E.Griffith, pers comm). Two sites were located in southern Hawkes Bay at Weber (Dry 1) and Horoeka (Dry 2) where soil moisture deficit is normally up

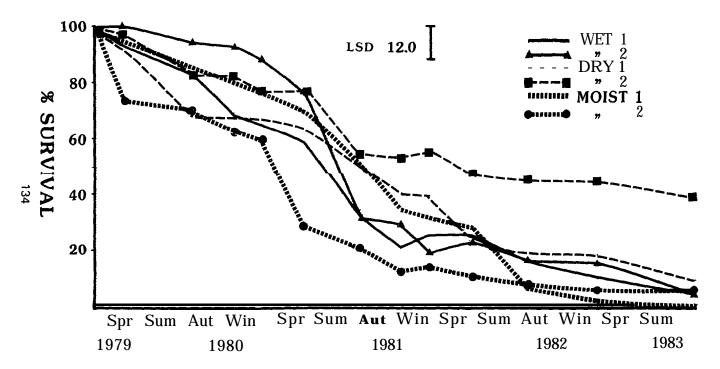


Figure 1: Survival (%) of feathermarked Huia white c/overplants at six hill country sites during 1979- 1983.