

THE EFFECT OF GRAZING ON THE GROWTH AND
DEVELOPMENT OF WHITE CLOVER
(*TRIFOLIUM REPENS* L.)
(M.Agr.Sc. Thesis)

W. PASCOE

Agronomy Department, Massey University .

A SWARD of white clover was defoliated by sheep at two grazing pressures (high and low), each over three grazing durations (3, 6 and 9 days) on three occasions during the summer period of 1972-3.

The total increase in dry matter production between grazings from the high grazing pressure treatment was greater than that from the low grazing pressure treatment. However, this effect proved significant in only one of the four regrowth periods, during which a substantial increase in the number of new stolons occurred.

High grazing pressure resulted in a greater reduction in the weight of leaves, petioles and stolons and in the number of terminal buds and length of stolons than did low grazing pressure. However, the number of new stolons increased considerably under high grazing pressure, owing possibly to greater light penetration to stolon level and the removal of more terminal buds.

Of the 3-, 6- and 9-day grazing durations, total dry matter production was greatest in the 3-day grazing treatment, presumably because of the longer regrowth period between grazings.

Several individual clover plant tracings were also carried out on selected treatments over several grazings to examine plant reactions in detail. For example, observations indicated that:

- (1) On an actively growing stolon, new stolons were generally initiated at nodes closer to the base than to the tip of that stolon.
- (2) The renewal of the terminal bud generally stimulated the initiation of growth of new stolons from axillary buds, particularly those nearer the grazed end.
- (3) Where terminal buds were grazed off or pulled, they generally broke at a node and died back to the nearest branch stolon.
- (4) The longer the stolon the more likely it was that the terminal bud was grazed.
- (5) As a result of grazing, initially continuous single plants were often left as several discontinuous growing units.