SIMULATED GRAZING OF LUCERNE (M.Agr.Sc. Thesis)

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CUTTING TRIALS designed to simulate lucerne defoliation by grazing animals were conducted in stands of irrigated Wairau lucerne over two seasons. The defoliation treatments were:

- (1) Once at 5 cm level (T1) .
- (2) In two stages over 9 days (T2)
- (3) In three stages over 18 days (T3) .

In Method 1 the final cut was made on the same day, followed by 36 days of regrowth, while in Method 2 the first cut of all treatments was commenced on the same day and the regrowth cut 45 days later. Consequently, in Method 2, treatments varied in their recovery period. Sampling occurred at 9-day intervals during recovery; each trial was carried through two cycles of treatment and regrowth.

Treatment 1 produced the highest dry matter yields and these were significantly more than T3, where the final cut at 5 cm severed previously induced crown shoots. The lower yields of T2 and particularly T3 were mainly attributed to fewer stems per plant, slower rate of stem elongation, and smaller, shorter plants. Plants which were cut in two or three stages generally had smaller crowns which carried fewer buds. A longer spelling period (45 versus 36 or 27 days) resulted in more herbage produced at final harvest. Light measurements suggested that light intensity at crown level was a major factor influencing growth from the crown.