

Persistence of perennial ryegrass cultivars in southern Tasmania

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Perennial ryegrass (*Lolium perenne*) is sown in almost all permanent pastures in the extensive grazing areas of Southern Tasmania. The cultivar 'Victorian' is recommended for areas with an average annual rainfall (AAR) of less than 500 mm and as an alternative to cv. Tasdale on the lighter, drier soils in areas receiving an AAR less than 650 mm (1). Experiments were sown in 1978 to compare the persistence of a new cultivar, Grasslands Nui, with that of cv. Tasdale and cv. Victorian at Jericho (AAR = 520 mm) and Ouse (AAR = 550 mm).

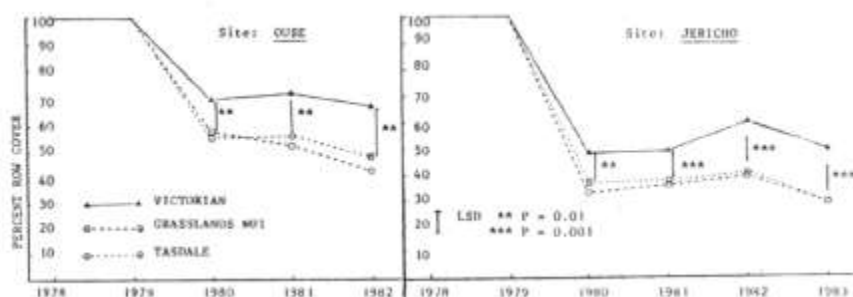
Method

A split plot design with the subplots arranged in strips was used. The three ryegrass cultivars were drilled at 7 kg/ha in rows 130 mm apart in duplicate plots 8.2 m wide and allocated at random in each of two blocks. These plots were fenced at right angles to produce main plots containing six ryegrass strips (2 of each cultivar) each 20 m long. One of the six main plots in each of the two blocks was excluded from continuous grazing for one month in every six during 1981 and 1982 to measure monthly pasture growth rates. Insect pests were controlled using organophosphate insecticides when required.

The percentage of the drill row covered by the ryegrass cultivar was used as the measure of persistence. Each year in mid winter when the pasture was closely grazed the row cover was estimated in twenty quadrats allocated at random in each subplot. The quadrats were 400 mm long and were aligned along the rows.

Results and Discussion

The percent row cover for each cultivar was independent of and unaffected by the periods of exclusion from grazing. The changes in the mean per cent row cover of the ryegrass cultivars at each site is shown below.



Excellent establishment of the ryegrass cultivars was achieved at both sites in 1978 and full cover was maintained within the drill rows during 1979. The percent row cover of all ryegrass cultivars declined markedly following the extended drought of 1979/80 but the decline was greater at Jericho where the soil remained dry until the end of June compared to mid April at Ouse. Only small fluctuations in row cover (5 - 10% absolute) have been recorded in subsequent years despite the occurrence of dry summer periods.

The Grasslands Nui cultivar persisted as well as 'Tasdale' at each site but the row cover of these cultivars was only about two thirds of that recorded for the cultivar 'Victorian'. The poorer persistence of 'Tasdale' in comparison to 'Victorian' is contrary to a previous report (2) which indicated that these two cultivars had similar persistence.

1. Stephens, A. & Carpenter, J.A. 1981. *Tasmanian J. Agric.* 52, 11-14.
2. Martin, G.J. 1971. *Tasmanian J. Agric.* 42, 80-83.