Grazing Summer-Active Tall Fescue in South-Eastern Australia

Margaret Raeside
Department of Primary Industries, Australia

Michael A. Friend
CRC Future Farm Industries, Australia

Alister Lawson
CRC Future Farm Industries, Australia

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Margaret Raeside[1,2], *Michael Friend*[2,3] *and Alister Lawson*[2,4]
[1] *Department of Primary Industries, Hamilton, Vic 3300,* [2] *CRC Future Farm Industries,* [3] *Charles Sturt University, Wagga Wagga, NSW 2678,* [4] *Department of Primary Industries, Kyabram, Vic 3620. E-mail: Margaret.Raeside@dpi.vic.gov.au*

Key words: tall fescue, tiller, production, persistence

Introduction In the Western District of Victoria, one of the dominant landscape features are valley floors, characterised by heavy clay soils which are prone to waterlogging in winter. Livestock producers could potentially improve pasture production over summer, filling the feed gap, while also reducing groundwater recharge by sowing summer-active tall fescue (*Lolium arundinaceum* syn. *Festuca arundinacea*) in these areas. However, there is little information on the production management and sward dynamics of summer-active tall fescue in this environment.

Materials and methods A summer-active tall fescue (cv. Quantum) pasture was established in November 2004. Two grazing system treatments were imposed in a completely randomised design in September 2006. They are: set stocked (SS), where the sward is maintained at an average feed on offer of 800-1000 kg DM/ha; or rotationally grazed at the 3 leaf stage (RG) to an average feed on offer of 800-1000 kg DM/ha over a 7—14 day period. The survival of tillers is monitored at the beginning of each month by marking all tillers in five fixed 100 mm diameter circular quadrants per plot that were located on tall fescue clumps.

Results and discussion Changes in tiller populations are shown in Figure 1. Tiller appearance rate in early summer (December and January) was low due to dry conditions. Rain in January 2007 (112 mm) prompted rapid tillering. Tiller death rates increased in March when tillers initiated in January died because of little follow-up rain. The autumn break occurred on 27 April 2007, prompting rapid tiller appearance in June. Waterlogging and cold temperatures resulted in few new tillers in July and August. Tillering increased in September in response to higher spring temperatures. Tillering was higher ($P<0.05$) under SS than under RG during July, August and September 2007, indicating SS continued tillering despite adverse growing conditions over winter and responded more rapidly to improving growing conditions in early spring. SS had higher ($P<0.05$) tiller death rates in November 2006 as the season dried off and over 2007's winter in response to low temperatures and waterlogging. These results indicate that SS responded quickly to good growing conditions, but was more sensitive to poor growing conditions.

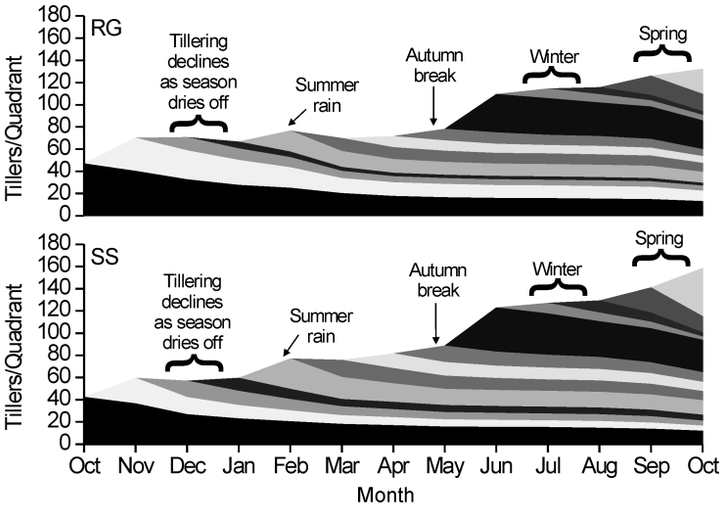

Figure 1 *Changes in tiller population and tiller age profiles for summer-active tall fescue under set stocking or rotational grazing over 2006/07. Shaded sections indicate trends in the population of tillers present at the start of the experiment and those appearing at successive monthly intervals.*

Conclusions A pasture sward consists of a population of tillers, the turnover of which determine pasture production and persistence. The results of this study show that tiller populations are more stable under rotational grazing than under set stocking and are dependent on growing conditions.