

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

TILLERING DYNAMICS IN A MIXTURE OF WARM AND COOL SEASON PERENNIAL GRASSES SUBMITTED TO GRAZING MANAGERMENTS STRATEGIES

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The mixture of warm and cool season perennial grasses can increase forage utilization period. However, to that to be possible it is necessary that both grasses persist across the years. The hypothesis of this work was that a mixture of a competitive perennial C₄ grass (kikuyu grass) with a stress tolerant perennial C₃ grass (tall fescue) can coexist and compose stable pastures along the years. The objective of this work was to evaluate the tillering dynamics and populational stability in a mixed pasture composed by kikuyu grass and tall fescue submitted to different grazing managements strategies. The experiment was conducted at Santa Catarina State University, located in Lages, SC, Brazil (27°84'S, 50°18'W, 960 m a.s.l.) from December 2015 to October 2017. The treatments consisted of five grazing management conditions mimicking a continuous stocking method (mob-grazing). In three of those treatments, the canopy heights were consistently maintained at seven, 12 and 17 cm and the other two treatments were maintained at 12 and 17 cm height but with a strategic defoliation to seven cm performed only once in the Autumn of each year. The nitrogen fertilization (250 kg ha⁻¹ yr⁻¹) was applied only in Autumn and Winter in both years. The experiment was conducted according to a complete randomized block design with three replicates. Tillering dynamics was evaluated in two PVC rings per experimental unit. The high defoliation severity performed in the Autumn did not change tillering dynamics neither canopies population stability. In 2016 pastures remained stable independent of the grazing management strategy, however, a transitory instability was observed in the Autumn due to the low emergence and survival rates of the tillers in both species. In the Winter of 2017, there was an increase in the population stability due to an increase in tiller population of tall fescue in all grazing management conditions (high tillers emergence and survival rates). In this season, kikuyu grass was strongly damaged by frost resulting in a very low tiller emergence and survival rates in this specie. Despite of that, there was a regrowth of kikuyu grass in Spring. Our results showed that the coexistence of these two species is possible and was stable across the two evaluated years.

Keywords: canopy height, continuous stocking, *Festuca arundinacea*, *Pennisetum clandestinum*, population stability

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