



Evaluation of genotypes of white clover (*Trifolium repens* L.) in the Campanha region of Rio Grande do Sul

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White clover (*Trifolium repens* L.) is one of the most important legumes and forage widely distributed in the world. It is widely used in Rio Grande do Sul in pastures intercropped with grasses or sward enhancement of natural pastures. However, inasmuch as there is no cultivars developed for the environmental conditions of the State, the Embrapa Pecuária Sul and Universidade Federal do Rio Grande do Sul lead in partnership a program of genetic improvement of the species, seeking to develop best populations adapted to local conditions. The objective of this study was to evaluate forage production of some of these populations in the Campanha region of Rio Grande do Sul, comparing them with commercial populations of undefined origin. The experiment was conducted at Embrapa Pecuária Sul located in Bagé-RS-Brazil. The experiment evaluated six genotypes, four improved populations (UFRGS-2004-2, CPPSUL-001, Synthetic-1 and Synthetic-2) and two commercial populations (Zapican and Jacuí), representing part of the genetic material currently marketed in the state. The experiment was established in May 5, 2013 with seeding rate of 4 kg ha⁻¹ of pure live seeds. The soil was prepared, limed and fertilized based on technical recommendations for forage grown. The experimental design was a randomized complete block with three replications, being the plots consisted of eight rows 2.5 meters long, spaced by 20 cm. Forage production, assessed in a plot area of 0.5 m², was performed when the plants reached the height of 25 cm, proceeding a cut back at 5 cm above ground level. After cutting, the samples were weighed and sub-sampled for subsequent morphological separation, subdividing them into leaves, stems and other species, with subsequent drying in an oven with forced air circulation at 60°C until constant weight. Then, it was performed reweigh expressing the results of total dry matter (TDM) and dry matter content of leaves (DMCL) in kg ha⁻¹. Four cuts were performed on the dates of October 22, 2013; November 22, 2013; December 19, 2013; and February 7, 2014. The results show that none of the tested improved genotypes was inferior than the commercial production cultivars. The improved genotypes that stood out numerically were UFRGS-2004-2 (8771.2 kg ha⁻¹ TDM and 70.8% of leaves) and CPPSUL-001 (8193.9 kg ha⁻¹ DM and 70.6% leaves). The commercial population Zapican produced 7963.4 kg ha⁻¹ DM being 69.6% leaves. The other genotypes showed similar rates of accumulation of TDM with little emphasis on the Synthetic-1, that presents 75.8% of leaves. This variable should be further explored, since this component may be a selection criterion related with forage quality. The results demonstrate that the UFRGS-2004-2 material has potential for registration and commercial release. Providing in this way, a cultivar officially registered in Ministry of Agriculture, Livestock, and Supply of Brazil and the production and marketing of certified seeds with high quality.

Keywords: forage breeding, productivity assessment, temperate legume species