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Collecting and characterizing landrace populations of *Lotus corniculatus* in Uruguay

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The production of forage legumes is restricted by several environmental constrains, such as drought, flooding, soil acidity, that may affect the establishment, growth and persistence, in spite of the adaptation of the main naturalized legumes to low fertility soils. The physiologic and morphologic characterization of the naturalized populations allow to determine the genetic diversity generated by processes of natural selection that happen in the properties of the farmers (diverse biotic and abiotic stresses, grazing, etc). This characterization is part of the investigation developed by the Project "Ampliación de la base genética de leguminosas forrajeras naturalizadas para sistemas pastoriles sustentables" [Amplification of the genetic base of naturalized forage legumes for sustainable pastoral systems]" (FTG-787/2005, financed by FONTAGRO). The forage production is evaluated in plots with 4 repetitions and three contrasting soils, while the morphological and sanitary characterization is developed exclusively in INIA The Estanzuela, Colonia, in small plots with 2 repetitions. The first experiments sowed in June 2006 studied the seed production and the components of production of 96 accessions of *Lotus corniculatus* that integrate part of the collection of Creole varieties of INIA, Uruguay with the check varieties (San Gabriel, Estanzuela Ganador and INIA Draco). The accumulated forage production in the first year was 10381 kg DM/ha on average. The winter-spring drought slowed down the legume establishment, showing important differences in the seedlings density and covered area by the legume. These establishment differences were reflected in the yield of the first spring cut that was carried out November 3 2006. The average yield was 1516 kg DM/ha, with a range of 1070 to 2123 kg DM/ha among the worst and best accession ($P>0.05$), respectively. The crop recovered with the rains of late spring, producing an average of 5199 kg DM/ha, with a range of 4783 to 5590 kg DM/ha in the cut of December 27 2006 ($P>0.05$). The rainfall during the summer was very favorable to the growth of Lotus, reaching an average yield of 3965 kg DM/ha in the cut carried out February 8 2007, with maximum and minimum of 4360 and 3549 kg DM/ha, respectively ($P>0.05$). The excess of water at the beginning of the autumn reduced the later regrowth; the following forage evaluation was carried out the 10 April with a mean of 2420 kg DM/ha, and maximum and minimum of 2709 and 1777 kg DM/ha, respectively. The variety most widely used in Uruguay is San Gabriel, for what the accessions were compared with the yield of this cultivar that produced 1459, 4840, 4334 and 2487 kg DM/ha in the cuts carried out November 3, December 26, February 8 and April 10, respectively. The accumulated total yield of most of the accessions was similar ($P>0.05$) to

San Gabriel, since only 4 accessions produced less forage. In the first cut none of the accessions differed significantly (P>0.05) from San Gabriel, while in the second cut 2 accessions overcame it. In the summer 4 accessions surrendered less than San Gabriel, while in the cut of April 16 accessions overcame San Gabriel. This differential performance of the accessions in function of the moment of harvest could be indicating differences of seasonal growth and/or persistence among the different origins. These experiments will be evaluated during three years, what will allow the identification of accessions that differ from the traditional cultivars that gave origin to the landvarieties.