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Vigna luteola and Vigna longifolia : the potential of local ecotypes from humid rangelands of southern Brazil

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Key words : Vigna luteola , Vigna longifolia , ecotype , rangeland , Brazil

Introduction This work was conducted with the purpose of evaluating the agronomic traits of *Vigna luteola* and *Vigna longifolia* . These sub-tropical forages legume occur naturally in naturalized pastures of Santa Catarina State Coastal Plains .

Methods & results Eighteen pastures were randomly sampled and oversown with both species ,in Florianópolis ,SC ,Brazil . On the average 19% of dry matter of the pasture was represented by *Vigna luteola* . *Vigna longifolia* was not present which raised a concern of seed dormancy related problems . Since no individual seed germinated after ten days in a germinating chamber , a new experiment was conducted to test the efficacy of seven different procedures to break the seed dormancy . Results revealed that sulfuric acid and scarification treatments were the most effective . Physical scarification the most desirable treatment since it was easy and did not pose the risk of acid . Oversowing *Vigna luteola* seeds proved to be an effective way of increasing its frequency in pastures . Scarification of *Vigna longifolia* seeds permitted a rapid way to break dormancy .

Discussion The geographic distribution , and agronomic traits of *Vigna luteola* and *Vigna longifolia* legumes were studied . In a survey done at a botanical museum , Herbrio Barbosa Rodrigues , it was observed that both species occur , as far north as the boundaries of Porto Belo , SC Brazil (27° South) . It was found , in the literature , that they occur as far south as the Bahia Blanca region of Argentine (45° South) . *Vigna luteola* , unlike *Vigna longifolia* , was also reported growing in several other regions of the world at the same latitudes . Field trips taken to the regions of occurrence revealed that both species grow together , in an environment of high salinity and humidity and low soil fertility and pH . Both species produced heavy nodulation in roots , abundant flowering , and seed production , and plants were found with high frequency along streets and highways . Plant palatability to cattle , observed foraging in a rope system , was very good and was regarded as the reason for low frequency of these legumes in nearby pastures . Based on these observations , forage samples were taken and their nutritive value analyzed by the EPAGRI Nutrition Laboratory . Results of these analysis were : In Vitro Digestibility of Organic Material (IVDOM) 68 , 2 59 2% , Total Digestible Nutrients (TDN) 56 3 50 0% , Crude Protein (CP) 20 4 18 9% , Calcium (Ca) 1 51 1 41% , respectively for *V . luteola* and *V . Longifolia* . Both legumes exhibit qualities that suggest further studies need to be conducted to determine agricultural practices required to increase and maintain their frequencies in pastures .