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REPORT OF THE RESEARCH RELATED TO Lotus tenuis

Three species of the genus Lotus with well defined forage value thrive in Argentina: L. corniculatus, L. pendunculatus and L. tenuis. The latter has spread naturally along a large area of Buenos Aires Province called the "Depresión del Río Salado" (Salado River Basin) with an extension of about 7.000 km<sup>2</sup>. This region is characterized by a high technological delay due, among other reasons, to alternate periods of droughts or floods and the presence of poorly drained and highly saline and alkaline soils. As a consequence, 70% of the area is covered by native grasslands utilized only for cattle production.

These bad conditions however do not hinder L. tenuis from spreading in a prolific way particularly in spring and summer periods, when it is a dominant species in the communities related to humid conditions (Collantes et al., 1986).

The excellent agronomic characteristics of L. tenuis for increasing production of the mentioned area lead us to its ecological and morphological study to be considered in forage breeding programmes.

Phenological studies were carried out in five different herbage communities (in press), where L. tenuis contributes considerably to the plant cover. These communities differed not only in their floristic composition, but also in the soil characteristics (pH, organic C, E.S.P.) showing L. tenuis plasticity.

Seeds from naturalized populations of L. tenuis have been collected and then evaluated since 1981 in the Introduction Garden for Forage Species located near the town of Chascomús (Buenos Aires Province). Different ecotypes of L. tenuis showed similar dry matter yields to L. corniculatus commercial cultivars during four years (Cardiello y Kade, 1987).

L. corniculatus cultivars are also sown in pasture mixtures in the "Depresión del Río Salado" in spite of not being as versatile as L. tenuis. Considering the similarity between the seeds of both species it was found that the observation of the micropyle and hilum region with a Scanning microscope showed a clear cut difference in the shape of the aril of each species (Strittmatter et al., 1985). Anyone having access to a binocular microscope would be able to confirm these differences.

The regional ecotypes were taxonomically placed as L. tenuis mainly through the leaf/length width ratio and then confirmed by karyotypic comparisons with introductions of a known origin. As the results of the chromosome number were not satisfactory, a survey of systematic identification of flavonoids in the mentioned cultivars and L. corniculatus cultivars was carried out. It was showed with the two dimensional paper chromatographic analysis of flavonoids that the two species were closely related, despite a compound (Rf in TBA=0.63; in Ac OH 15%=0.02) was only identified in L. tenuis (in press).

PERSONAL DATA

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PUBLICATIONS RELATED TO *L. tenuis*:

- "Distribución de especies en función de factores edáficos en pastizales naturales de la Depresión del Río Salado". Species distribution in relation to edaphic factors in native grasslands of the Salado River Basin. 1986. Collantes, M.B.; Kade, M.; Miaczynski, C. y Santanatoglia, O. STUDIA OECOLOGICA, Univ. of Salamanca. (admitted).
- "Compared morphology of the aril region in *L. corniculatus* L. and *L. tenuis* Waldst. et Kit. seeds". 1985. Kade, M.; Dizeo de Strittmatter, G. and Valverde, A. LOTUS NEWSLETTER 16: 8.
- "Introducción de Especies Forrajeras en el Partido de Chascomús (Prov. de Buenos Aires). Leguminosas (1981/85)". Plant Introduction in Chascomús (Province of Buenos Aires). Legumes (1981/85). 1987. Cardielo, R.N. y Kade, M. Revista Argentina de Producción Animal (admitted).