

A SURVEY OF DISEASES AFFECTING LOTUS-CORNICULATUS IN
WEST URUGUAY AND ENTRE RIOS PROVINCE (ARGENTINA)

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Low persistence (3-5 years) of cultivated pastures is the main forage production problem in the region. This is more critical for the legume than for the grass component of the pasture. Although many interacting factors (management, water stress, insects, and pests) are involved in pasture plant losses, fungal diseases seem to play a major role in these processes. Therefore, a high priority has been assigned to the study of disease incidence on forage legumes and its relation to legume persistence.

Lotus corniculatus L. is the main forage legume in West Uruguay and Entre Rios Province (Argentina), used in more than 90% of the seeded pastures.

By December 1991, a cooperative research project was established between the Agronomy Faculty, Republic's University, Paysandú, Uruguay and INTA Agr. Exp. Stn. C. del Uruguay, Entre Rios, Argentina, to study the incidence of diseases affecting *L. corniculatus* in the region with the objective to use this information in the current *Lotus* breeding program to develop and establish artificial selection systems for tolerance and/or resistance to main diseases.

Plant samples (250-500 plants/site) were obtained from ten pastures representing different pasture ages and two soil types: vertisols (Entre Ríos) and argisols (Paysandú).

Plants were examined macroscopically and symptoms were described. Each plant was cut longitudinally along the crown and root zone, and vascular damage (crown and root rot) was classified according to a 0-3 scale, where 0 = healthy tissue and 3 = + 70 % tissue affected.

Isolations on artificial culture media were performed with plant subsamples representing most common symptoms. Fungal colonies were re-isolated to obtain pure colonies which were used to identify the fungi. A pure colony collection is maintained at 4°C.

The information gathered after seven months reveals the importance of crown and root rot affecting lotus pastures in the region. Although this incidence, measured as frequency of plants showing symptoms, was larger on vertisols than argisols (73.7 vs 61.7 %), both values are high enough to consider crown and root rot as the main disease in both soil types.

Five fungal pathogen genera with more than one species each, were identified from the isolations (*Fusarium* sp., *Colletotrichum* sp., *Phoma* sp., *Stemphyllum* sp., and *Phomopsis* sp.). Among them, *Fusarium* sp. accounted for more than 80 % of the isolations and the species *F. oxysporum* for more than 75 % of the cases. Among the other genera, *Colletotrichum* sp. was isolated in approximately 12 % of the plants showing symptoms.

Although these are preliminar results, the observed trend shows in one hand the high incidence of crown and root rot in plants apparently healthy at the aerial level, and in the other the prevalence of one pathogen species (*F. oxysporum*) associated with this symptom.