



Species Diversity of the Tropical Legume Genus *Stylosanthes* in Venezuela

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Introduction

- *Stylosanthes* is a predominantly new World genus containing several species that are currently used as forage, for soil cover, soil improvement, and increasingly also leaf meal production for livestock feed
- The genus is particularly important for low-input production systems due to the adaptation of many species to drought conditions and low-fertility soils
- Venezuela can be considered, after Brazil and Mexico, as the third center of diversification of *Stylosanthes*
- The most important contribution of Venezuelan origin to cultivar development of a tropical legume was a *S. hamata* ecotype, opportunistically collected in the mid 70s in Maracaibo, which resulted in cv. Verano, the world's most important pasture and ley-farming legume for the dry tropics

Methodology

- To assess the diversity of the genus *Stylosanthes* in Venezuela, a solid and comprehensive biogeographical database was built based on information from
 - ✓ about 1000 herbarium specimens reviewed in 27 herbaria in Venezuela and USA
 - ✓ passport data of over 500 germplasm accessions registered in the forage germplasm databases of CIAT (Cali, Colombia) and CSIRO/QDPI (Australia)
- Using the GIS tool FloraMap™, maps of natural distribution of each species were produced, based on the combined specimen and germplasm information

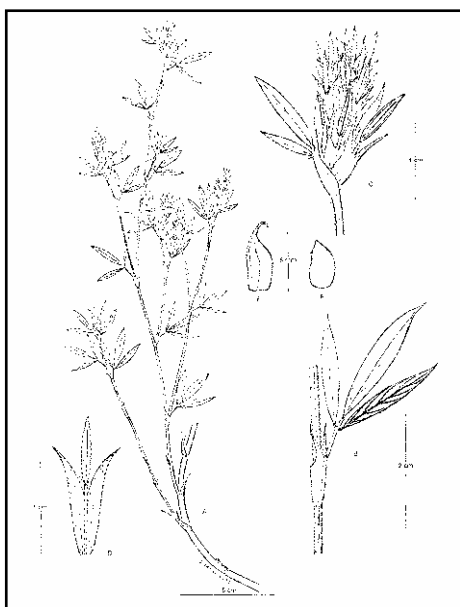


Fig. 1. *Stylosanthes sericeiceps* S.F. Blake

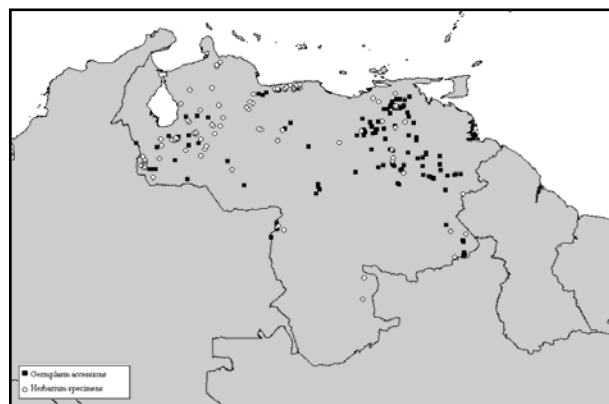


Fig. 2. Natural distribution of *Stylosanthes guianensis* (Aubl.) Sw.

Results

- The natural distribution of *Stylosanthes* species in Venezuela is very wide; the different species have multiple adaptations and can be found in a quite broad range of environments
- Eleven species occur in the country: *S. angustifolia*, *S. capitata*, *S. gracilis*, *S. guianensis*, *S. hamata*, *S. humilis*, *S. scabra*, *S. sericeiceps*, *S. viscosa*, and two new, as yet undescribed species; *S. sericeiceps* (Figure 1) is endemic to Venezuela
- *S. guianensis* and *S. scabra* are the most variable *Stylosanthes* species in Venezuela; they deserve further treatment at the infra-specific level
- *S. guianensis* has the widest distribution of *Stylosanthes* in the country (Figure 2); this is also reflected by the species' large morphological variability
- Most of the Venezuelan *Stylosanthes* species are well adapted to dry environments: perennials have tap roots and can reach deep soil layers, whereas annual species produce particularly large quantities of seed
- Germplasm collection gaps were identified using the information of the bio-geographical database and FloraMap™ (Figure 3 as an example)

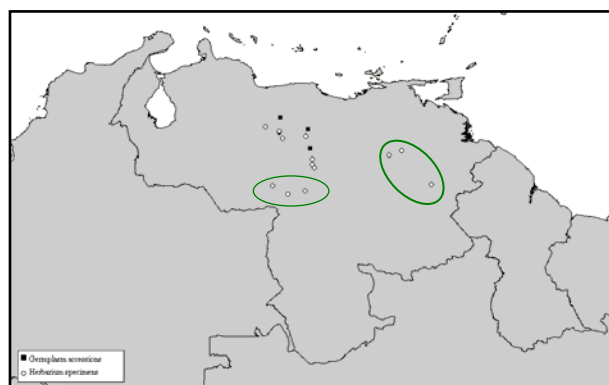


Fig. 3. Germplasm collection gaps for *Stylosanthes angustifolia* Vog.

Acknowledgment

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