



Surveying and Collecting Native *Centrosema*, *Stylosanthes*, and *Desmodium* Germplasm in Venezuela

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Introduction

- Venezuela is among the countries with the highest biodiversity in the Neotropics.
- Within savannah ecosystems, a high diversity of tropical legumes with a potential for forage use has also been extensively recognized.
- The results presented here are part of an ongoing joint project carried out by several national organizations to survey, collect and evaluate native legumes of the three most important forage legume genera.

Objectives

- To broaden the existing Venezuelan germplasm collections of *Centrosema*, *Stylosanthes* and *Desmodium*.
- To provide a baseline for the establishment of the Venezuelan seed bank of forage legumes (BGLFV).
- To extend and promote collaborative research on tropical forage genetic resources among national and international institutions.

Methodology

- Fifteen intensive exploration and collecting trips were carried out from 2000 to 2002 in the States of Anzoátegui, Aragua, Cojedes, Guárico and Monagas.
- Collection routes were defined based on previous exploration trips and using vegetation maps and climate and soil databases; collection methodology followed established guidelines.
- At each collection site, mature seeds were taken from most plants of the local population, as well as herbarium specimens, soil samples and root nodules when possible.
- Information about collection sites was recorded in a pre-elaborated passport chart.
- Collected germplasm was multiplied, if necessary, and stored in the new seed bank.



Centrosema



Stylosanthes

Desmodium

Results

- A total of 231 collections were registered, including 152 germplasm accessions and 79 herbarium specimens. Additionally, 50 soil samples and three root nodules were collected (Table 1).
- Only 30% of the accessions were collected in well-drained savannah environments, whereas the remaining materials mostly came from forested areas at foothills and mountain regions (up to 1080 m a.s.l.).
- Centrosema* was the most collected genus (62%) and the most collected species was *C. molle* (46 samples). Based on the collection sites, it appears that *C. molle* has no special preferences regarding climate and soil.

Table 1. Number of *Centrosema*, *Stylosanthes* and *Desmodium* accessions and associated herbarium specimens, soil and root nodule samples collected from 2000 to 2002.

Genus	Species	Seed	Specimens	Soil	Nodule	
<i>Centrosema</i>	<i>brasilianum</i>	10	5	4	-	
	<i>macrocarpum</i>	17	8	7	1	
	<i>molle</i>	46	12	17	1	
	<i>pascuorum</i>	2	4	3	-	
	<i>plumieri</i>	3	1	-	-	
	<i>sagittatum</i>	2	1	-	-	
	<i>schottii</i>	2	1	1	-	
	<i>venosum</i>	1	1	-	-	
	<i>spp</i>	6	-	-	-	
	<i>Desmodium</i>	<i>barbatum</i>	1	9	2	-
<i>distortum</i>		1	-	-	-	
<i>incanum</i>		2	3	-	1	
<i>scorpiurus</i>		3	8	1	-	
<i>tortuosum</i>		5	6	3	-	
<i>spp</i>		14	1	2	-	
<i>Stylosanthes</i>		<i>angustifolia</i>	2	1	-	-
		<i>gracilis</i>	3	-	3	-
	<i>guianensis</i>	-	2	1	-	
	<i>hamata</i>	7	8	-	-	
	<i>humilis</i>	-	1	-	-	
	<i>scabra</i>	4	-	-	-	
	<i>viscosa</i>	1	1	3	-	
	<i>spp</i>	9	7	2	-	
Others genera	11	7	5	-		
Total		152	79	50	3	

Conclusions

- This work has contributed to broadening the existing Venezuelan collections of *Centrosema*, *Stylosanthes* and *Desmodium*.
- New germplasm was collected from natural areas which had not been explored before, mainly evergreen forests at various altitudes and forest-savannah ecotones.
- In terms of biodiversity conservation, the importance of this new material is highlighted, because of the rapid conversion of forested areas into agricultural land.
- The new collection has set the baseline to the creation of the Venezuelan seed bank of tropical forage legumes.
- Further efforts are required to collect native forage legumes from as yet unexplored areas, and to maintain the existing collections for future evaluation and conservation purposes.

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