



Deutscher Tropentag, October 11-13, 2005, Hohenheim

“The Global Food & Product Chain—
Dynamics, Innovations, Conflicts, Strategies”

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

ORLANDO GUENNI¹, TEODARDO CALLES², JOSE LUIS GIL³, JOSE FARIÑAS⁴, IRAIDA
RODRÍGUEZ⁵, FREDDY ESPINOZA³, DAMELIS SANABRIA⁴, RAINER SCHULTZE-KRAFT²

¹Central University of Venezuela (UCV), Agricultural Botany, Agricultural Ecology, Venezuela

²University of Hohenheim, Biodiversity and Land Rehabilitation in the Tropics and Subtropics, Germany

³National Institute of Agricultural Research (INIA), CENIAP-Maracay, Venezuela

⁴National Institute of Agricultural Research (INIA), CIAE-Monagas, Venezuela

⁵National Institute of Agricultural Research (INIA), CIAE-Anzoátegui, Venezuela

Abstract

Venezuela is considered as one of the countries with the greatest biodiversity in the world. Such attribute is explained by the variety of topographic, climatic and edaphic conditions. Consequently, the country comprises a large number of different natural environments such as high mountains, arid and semiarid regions, tropical forests, wetlands and savannahs, and 22 different life zones and more than 600 vegetation types have been identified. As a result, the existing flora is very rich, with a high diversity of native legumes. Exploration and surveying of Venezuelan native legumes, specifically *Centrosema*, *Stylosanthes*, and *Desmodium*, were carried out between 2000 and 2002 as a collaborative project among several national institutions. Fifteen intensive exploration and collecting trips of varying duration were carried out during the dry months of that period. These missions covered eight states in areas such as the central and eastern llanos, and the foothills and mountain zones south of the “Cordillera de la Costa”. A total of 152 seed samples, 79 herbarium specimens, 50 soil samples and three of root nodules were collected. The germplasm included eight, seven and five identified species of *Centrosema*, *Stylosanthes*, and *Desmodium*, respectively. The former genus was the most collected, with a total of 91 seed samples representing 60% of the total collection, followed by *Stylosanthes* with 33 samples (22%), and *Desmodium* with 26 (17%). Within each genus, the most collected species were *C. molle*, *S. hamata* and *D. tortuosum*, with 46, 6 and 5 samples, respectively. Maps with the geographical distribution of the entire collection, as well as a preliminary classification of a 34-accession collection of *C. molle* by climatic groups, using the GIS software FLORAMAP™, are presented. The resulting groups within the *C. molle* collection are based on differences in total rainfall and its annual distribution, as well as the altitude and temperature of the collecting sites. Possible associations between natural distribution, climate, soil texture and fertility, and habitat of origin are discussed. The actual germplasm collection has been the basement for the creation of the national seed-bank of forage plants.

Keywords: *Centrosema*, *Stylosanthes*, *Desmodium*, legume collection, natural distribution, plant genetic resources (PGR)