Summary

The most distinctive and stable characters to evaluate 71 accessions of *Centrosema* spp. were determined,

and the most promising accessions for sandy soils in subtropical conditions were identified. Data were analyzed by multivariate methods: principal component analysis (PCA); cluster analysis (CA), using the mean Euclidean distance for quantitative data and the Jaccard coefficient for qualitative data; and the UPGMA (unweighted pair-group method with arithmetic average) method for clustering accessions. In decreasing discriminatory order, characters of principal component analysis were: persistence, vegetative growth, disease and cold tolerance, flowering date, length of flowering, pest tolerance, and seed weight. Cluster analysis showed high variability within the *Centrosema* genus, classifying the accessions into 14 groups. Among the most promising species, the highest variability was observed in *C. pubescens*. Early flowering accessions of *C. pubescens* presented the highest seed production, an important factor for pasture renewal and maintenance under conditions of frost. The most promising species evaluated were *C. acutifolium* (no. 2), *C. grandiflorum* (no. 10), *C. macrocarpum* (no. 11), *C. pubescens* (no. 35, 37, 38, 39, 41, 46, and 48), and *C. virginianum* (no. 67).