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Field Characterisation of a Collection of the Forage Tree Legumes *Leucaena diversifolia* and *L. trichandra* — an Ongoing Project in Colombia

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Abstract

Previous research has shown that *Leucaena diversifolia* and the closely related *L. trichandra* can be considered as promising tree legumes: Because of their adaptation to acid/infertile soils and to higher altitudes (<2000 masl), they offer an alternative to the wellknown and widely used multipurpose tree *L. leucocephala* which doesn't thrive under such conditions. The evaluation of *L. diversifolia* and *L. trichandra* was hitherto restricted to only few accessions.

The study is based on the world collection available in 2005 (50 accessions of *L. diversifolia* and 11 of *L. trichandra*), established on an acid, low-fertility Ultisol at the CIAT-Quilichao experiment station (1000 masl) in Colombia. The objective is to assess differences in morphological, agronomic and nutritive-value characteristics both between species and among accessions.

The study is still ongoing but data available now indicate good to very good vigour of all accessions, and absence of pests and diseases. Four months after transplanting seedlings to the field, plant height and width were up to 2.3 m and 2.4 m, respectively. Growth habit ranges from erect to ascendent, with large differences in number of branches below 0.5 m, the usual cutting height for forage shrubs; hence differing regrowth capacity can be expected. Morphological features like length and width of leaves and pinnules vary greatly among accessions as do pinnule pubescence and colour of pinnule margins. Since texture of leaves differs greatly (from soft to rather coriaceous, and from hairy to glabrous), differences in acceptance by grazing livestock are likely to occur. The main morphological differences between the two species are length and width of pinnules (4.0–8.0 mm respectively 0.8–1.4 mm for *L. diversifolia*, and 5.2–12.6 mm respectively 1.6–3.2 mm for *L. trichandra*), and numbers of pinnae per leaf and pinnules per pinna, both being distinctly lower for *L. trichandra*.

Ongoing evaluations include nutritive value, yield and regrowth capacity, especially for the dry season. Promising accessions will be selected for regional trials at different elevations (1000–2000 masl) to enable definitive conclusions on species adaptation and productivity in tropical midaltitude hillside situations.

Keywords: Germplasm characterisation, *Leucaena diversifolia*, *Leucaena trichandra*, tropical tree legumes