



Tropentag, September 14-16, 2010, Zurich

“World Food System —
A Contribution from Europe”

Herbaceous Multipurpose Forage Legumes in Central America — Status after 10 Years of CIAT Involvement

REIN VAN DER HOEK¹, AXEL SCHMIDT², MARTIN MENA³, SABINE DOUXCHAMPS⁴, MICHAEL PETERS⁵

¹*International Centre for Tropical Agriculture (CIAT) Central-America / CIM, Nicaragua*

²*Independent Consultant, Peru*

³*Instituto Nicaraguense de Tecnología Agropecuaria (INTA), Nicaragua*

⁴*ETH Zurich, Institute of Plant Sciences, Switzerland*

⁵*International Center for Tropical Agriculture (CIAT), Colombia*

Abstract

For over a decade CIAT and partners have worked on the integration of herbaceous multipurpose forage legumes in smallholder mixed crop-livestock systems in the drought-prone regions of Central America. Chronic dry season feed shortages and declining soil fertility in the predominating maize-bean production systems with an increasing role of livestock have been targeted using participatory germplasm selection and development approaches. Due to their diversity and drought tolerance allowing farmers improved crop residue animal feeding and soil enhancement in time periods when land is not occupied with staple crops, herbaceous multipurpose legumes have emerged as the most promising options improving productivity as well as environmental and socio-economic sustainability. Symbiotic N₂ fixation improves soil fertility (replacing up to 60% of fertiliser needs) and increases subsequent maize yields. Milk production increases by 20–30% when supplemented to maize residues grazed by cows. Farmers recognise these positive effects. The focus for the coming years will be to scale results and to produce substantial amounts of seed with strong farmer involvement, and with a leading role of the national agricultural research and extension systems and other development partners.

While important progress has been made, there is still a lack of knowledge on how to manage the agronomy of these improved production systems at specific locations. More emphasis must be put on the generation of extension information to enable farmers to benefit from the full potential of these legumes, especially in the wake of the climate change impacts projected for Central America. There is also a continued need to identify and develop herbaceous legumes for grazing purposes, as well as for the recuperation of the large areas of highly degraded soils. Current available options are very limited.

In addition to their utilisation for ruminants, CIAT and partners engaged more recently also on research on the biophysical and socio-economic suitability of herbaceous forage legumes for monogastrics (especially pigs). This will offer new options - especially to small (female) farmers - to increase productivity and product quality while reducing costs.

Keywords: Animal feed, Central America, CIAT, drought-prone regions, green manure, herbaceous forage legumes