A Decade of Research on Hedgerow Species for Alley Cropping in Different Environments in Haiti. (A06-shannon154438-Poster)

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Abstract:

Tree and shrub species were evaluated in Haiti as hedgerows for alley cropping under differing elevation and rainfall. In 1991, 35 species were planted at four sites. Hedgerows were pruned four times per year for five years, and leaf, small and large stems determined. Five species yielding highest biomass at mid elevation (900 - 1200 m) and at low elevation were assessed for in situ decomposition rate and N release, and for effect on soil organic C and N. Between 1997 and 2001, five species were tested in alley cropping at a high rainfall, mid-elevation site, and an on-farm trial compared Delonix regia and Leucaena leucocephala at low elevation. L. leucocephala gave highest biomass and N yields at three low-elevation sites ranging in rainfall from 700 to 1800 mm. On farm, most biomass was harvested from D. regia, because leucaena was browsed by goats. Gliricidia sepium decomposed and released N most rapidly, while D. regia was slowest. L. leucocephala and G. sepium released 62 kg N ha-1 within first 4 weeks. Soil organic C and N after five years of biomass applications was highest from Leucaena species and D. regia. At mid elevation, Acacia angustissima gave highest biomass and N yields, had highest soil organic C and N and released most N, despite a low decomposition rate.

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Presentation Information:

Presentation Date: Monday, November 11, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 334

Keywords:
alley cropping, hedgerow species, elevation, decomposition