Foliar nitrogen retranslocation in some major agroforestry species in Sri Lanka

Concentrations of nitrogen immature and senescent leaves of thirteen commonly grown agorforestry species were determined and per cent resorption of nitrogen during leaf senescence was calculated in two experiments. One experiment involved nine species [*Gliricidia sepium*, *Alstonia scholaris* (Havari Nuga), *Macaranga peltata* (kande), *Artocarpus intergrifolia* (Jak), *Artocarpus altilis* (Bread Fruit), *Mangifera indica* (Mango), *Terminalia cattapaa*(Indian Almond), *Acacia auriculiformis*, and *Acacia mangium*] while the other involved four species [*Psidium guajava* (Guava), *Nephelium lappaceum* (Rambutan), *Manilkara sapota* (Sapota) and *Trema orientalis* (Gadimba)]. The studies were conducted at Mapalana, kamburupitiya in june, 1997 and September, 1998, respectively.

Three these from each species with three branches per tree were randomly selected, and mature and senescent leaf samples were taken from each branch. All leaf samples were oven-dried, ground and analyzed for total nitrogen by Kjeldhal method

Considerable differences in the concentration of nitrogen were observed among the species and between mature and senescent leaves within species. *G. sepium* had the highest concentration of leaf nitrogen both ay mature (3.51%) and senescent (2.49%) stages. On the other hand, M. indica had the lowest concentrations of leaf nitrogen at mature (1.42%) and senescent (0.71%) stages.

Considerable inter-specific variation in nitrogen resorption efficiency was evident among the species. The nitrogen resorption efficiency ranged from 28.94 – 54.59%. The highest nitrogen resorption efficiency was observed in *T. cattapa* (54.59%) followed by M. indica (48.78%), *T.orientalis* (48.69%), *N. lappceum* (43.39%), *M.sapota* (42.57%), *A. integrifolia* (42.43%), *A. altilis* (41.83%), *A. auriculiformis* (40.14%), *M.peltata* (39.76%), *A. mangium* (36.80%), *A.schalaris* (34.53%) *P.guajava* (31.88%) and *G. sepium* (28.94%) Implications of the inter-specific variations in nutrient resorption in developing sustainable agroforestry systems are discussed.