Alley cropping has received considerable attention over the last decade as an agroforestry technology with potential to sustain crop productivity via enhanced soil protection, nutrient cycling, and/or reduced weed pressure (Kang et al., 1981, 1985, 1990). The system involves the growing of food crops in the alleys formed by hedgerows of fast-growing trees. Hedgerow species are generally N-fixing and offer the potential for enhancement of the soil N status in addition to recycling soil nutrients. The hedgerows are pruned periodically to provide green manure or mulch for the crops in the alleys and to minimize shading and root competition by the hedgerows.

Experimental results from several studies on high-base status soils (mainly Alfisols and Entisols) show that alley cropping can sustain crop yields, maintain soil nutrient status and prevent organic matter decline (Atta-Krah et al., 1986; Yamoah et al., 1986; Lal, 1989; Kang et al., 1990). Hedgerows planted along the contours on sloping land can physically minimize runoff and soil erosion. In a study to evaluate soil erosion under conventional plowing, no-till, and alley cropping on a 7% slope in Nigeria, Lal (1989) reported mean rates of soil loss over 2 yr of 8.75 t ha$^{-1}$ under plowing, 0.95 under alley cropping (prunings incorporated by tillage) and 0.02 under no-till. Alley cropping with *Gliricidia sepium* on slopes of 45 and 70% in Colombia (annual rainfall 4000 mm) reduced soil losses of 23 to 38 t ha$^{-1}$ yr$^{-1}$ under maize (*Zea mays* L.) to 13 t ha$^{-1}$ yr$^{-1}$ (van Eijk-Bos & Moreno, 1986). The ef-