COFFEE IN AGRO-FORESTRY SYSTEMS INVOLVING DIFFERENT TREE SPECIES

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The experiment was conducted to study the growth and yield of arabica and robusta coffee grown in agro-foresry systems involving different shade tree species. The final objective is to select the best tree species as shade for coffee.

The experiment was conducted at Delpitiya in the mid country wet zone of Sri Lanka. The experiment site contained four tree species established in 1986 at 2.5m x 2.5m spacing. The four tree species were *Gliricidia sepium, Calliandra calothyrsus, Acasia magnum and Erythrina lithosperma.* Robusta coffee in 2.5m x 2.5m and arabica coffee in 1.25m x 1.25m spacing were planted between the shade trees. The measurements were also made in a control treatment which had coffee without shade. Each treatment had three replicates.

Yield data of this experiment showed that the highest coffee yield was obtained under *Gliricidia* and *Calliandra*, next under *Acacia* and then *Erythrina*. The lowest yield was obtained from coffee grown without shade.

Coffee plants were collar pruned in 1996 and collected growth measurement of coffee showed significantly highest shoot growth under *Gliricidia, Calliandra, Acacia and Erythrina*. Unhealthy stunted shoots were observed in the coffee grown without shade. Hence, it can be concluded that coffee is best grown under *Gliricidia, Calliandra, Acacia and Erythrina* shade.