

The Effect of Established Shade Trees on the Yield of Arabica Coffee in Two Planting Patterns

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SUMMARY

Arabica coffee is a shade-loving plant, which grows wild under three or four canopy strata of different forest tree species in its natural habitat in the south-western Ethiopia. It is also extensively cultivated in small gardens and large scale plantations under variety of shade trees in the country. In order to determine the effects of shade on coffee productivity, 13 known and widely used shade tree species were collected and established in strip blocks at Jima Research Center some 25 years ago. Selected coffee trees of arabica coffee were planted in two patterns (intercropped within and strip planted between the shade tree plots). Coffee yield differences due to shade trees and planting patterns were highly significant, where striped plots out yielded those intercropped with shades. Among the shade trees, *Millettia ferruginea*, *Acacia abyssinica*, *Albizia sp.*, *Erythrina abyssinica*, *Calpurnea subdecondra* and *Cordia africana* resulted in significantly higher coffee yields. These shade trees also produced higher amount of litter fall (mulch), and most are leguminous with feathery leaves, adequate canopy coverage and moderate light interception (26-60%). It is, therefore, concluded that productivity of coffee stands can be more improved by growing in strips between such prominent shade trees or by inter cropping with/planting under/ the shades as practiced in the traditional production systems in the country.