

**EFFECT OF COCONUT-BASED MIXED CROPPING
SYSTEMS ON MICROCLIMATIC CODITION, LEAF
AREA DEVELOPMENT AND FEMALE FLOWER
PRODUCTION OF COCONUT**

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ABSTRACT

There is sufficient scientific evidence to prove that Coconut (*Cocos nucifera*) is sensitive to adverse conditions which are associated with climate change. Specially, water stress and high temperature that associated with long time dry spells would adversely affect reproductive process and yield of coconut. However, coconut based mixed cropping systems can play a significant role in the adaptation to climate change by changing the micro climate. Also, the mixed cropping systems can affect on the female flower production and leaf area development that finally result better dry matter production and higher fruit set. Therefore, this ongoing study was conducted to evaluate the effect of existing coconut-based mixed cropping systems (coconut+guava, coconut+banana in Anuradhapura and coconut+cashew in Puttalam) in the Dry Zone of Sri Lanka on microclimatic conditions, Leaf Area Index and female flower production of coconut. The effect of microclimatic conditions were measured by gathering data on air temperature at canopy level, soil temperature at 25 cm depth, soil moisture content at both centre of square and manure circles. The results of the study revealed that the coconut-based mixed cropping systems can affect on air temperature at canopy level, soil temperature, soil moisture content, Leaf Area Index and female flower production of coconut. Here, coconut+banana and coconut+guava systems at Anuradhapura were significantly affected on air temperature at canopy level, soil temperature, soil moisture content and female flower production. But, it showed no significant effect on Leaf Area Index. In Puttalam, other than female flower production all the other parameters were affected by the coconut-based mixed cropping system (coconut+cashew) used.

Key words: Coconut-based mixed cropping systems, Microclimate, Leaf area index, Female flower production