

A B S T R A C T

Coconut provides food, medicines and number of other economic products. Coconut is cultivated in an area of 412,550 ha and it is one of the main plantation crops in Sri Lanka. Coconut yield depends on genetical and environmental factors. Rainfall and fertilizers are important yield determining factors.

The objective of this study was to estimate the relationship between nitrogen, phosphorous, potassium fertilizers and rainfall on nut and copra yield. Time lagged multiple regression models were used to estimate Cobb-Douglas production functions. The data for the study were obtained from experiments conducted by the Coconut Research Institute at Ratmalagara Estate in the semi-dry zone.

The estimated models explain more than 50% of yield variation on both nuts and copra yield. Nitrogen application un-lagged and phosphorous application with two year lag have significant positive impact on both nuts and copra yield. The potassium level did not have a positive effect on nut yield. But the potassium application with a two year lag showed positive effect on copra yield. Rainfall with a one year lag had a positive effect on both nuts and copra yield. The study reveals that the relationship between fertilizer application and coconut yield is time lagged. This indicates that small farmers who face the with scarcity of financial capital may be reluctant to invest on fertilizer application. The significant relationship between rainfall and yield indicates the need for supplementary water supply where rainfall is not sufficient variable. Nitrogen application for nut production with experimental levels and present C.R.I recommendation were economical. Phosphorous application in both mixtures were not economical. Potassium application with year lag and two year lagged were economical in experimental level and only two year lagged potassium level were economical in C.R.I mixture.