DYNAMICS OF AVIFAUNA IN THE RAJARATA FARM-

A FRUIT ORCHARD IN DAMBULLA, SRI LANKA

By

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ABSTRACT

The present study was carried out in a fruit orchard in Dambulla, Sri Lanka well known as Rajarata farm. The farm is situated in Mahaweli system 'H' and approximately 15Km from Dambulla city. The farm is 140 acres in extent and situated in dry intermediate zone of Sri Lanka near to the Kalla wewa sanctuary. The main crop of the farm is TJC mango; a new mango variety to Sri Lanka. In addition to that the farm grows Embull banana, coconut, rice and other varieties. Due to the ecofriendly agricultural practices of the farm, a good number of invertebrate and vertebrate species can be seen throughout the year.

The present study was mainly confined to three selected fruit cultivation plots (mango, Banana and mixed- comprised of both mango and banana) of the farm and enabled to gather valuable data about the changes of species richness and abundance of avifauna in relation to cultivation type, weather change, phenology change of fruits and agronomic practices. Within six months of time period, data of avifaunal species richness and abundance in each fruit type were gathered weekly basis using standard methods namely the variable circular plot method, line transect method. The gathered data was correlated with major aspects of study objectives such as weather changes (temperature, rain fall, wind speed etc...), phenology changes of fruits (flowers, immature fruit, mature fruits etc...) and agronomic practices (pesticides usage, pruning practices etc...).

According to the study 72 species of birds were recorded which comprised in 34 families. Among the 72 species five were endemic and two were migrant species. For the purpose of comparing variations of avifaunal diversity in the three selected fruit types (mango, banana and mixed cultivation), two ecological indices were considered namely the Shannon Weiner index and the Simpson index. During this study, highest diversity of birds was recorded in the mango plot followed by the mixed and the banana. Also the species abundance in each fruit type over the study period was statistically analyzed by ANOVA to find out whether the abundances in the three plots were significantly different. The statistical analysis (ANOVA) revealed that the overall abundance in the three different plots were significantly different.

According to data analysis, bird diversity was clearly changed with the changing weather parameters namely temperature, wind speed and rain fall. Changing phenology stages of mango had an effect on species richness and abundance over the six months period. Agronomic practices such as pesticide usage and pruning also had an effect on birds' diversity by changing their foraging, perching or nesting patterns.

The farm edge was bordered to Kala wewa sanctuary which harboured the highest number of species and abundance of avifauna when compared with the three study plots.