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RESEARCH ARTICLE

Biodiversity assessment under cocoa (*Theobroma cacao* L.) plantations of Tamil Nadu

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SUMMARY : World over the scientific community is working for improving biodiversity beyond protected areas. In this context, lot of scientific research has been conducted in agro plantations, which is increasingly projected as the second best option to protected areas. Among the plantation crops, cocoa has received special attention as it grows under the canopy of diverse shade plants. There are many scientific studies to show that cocoa agro forests are environmentally preferable to other forms of agricultural activities in tropical regions. Research conducted in Latin America indicates that the capacity of cocoa plantations to conserve birds, ants and other wildlife is greater than in any other anthropogenic land use systems. The influence of cocoa plantations on faunal biodiversity was studied under cocoa intercropped plantations in comparison with coconut monoculture plantations at two different ago climatic zones of Tamil Nadu namely Western zone (Pollachi and Theni) and Cauvery Delta zone (Thanjavur). The similarity matrix at Western zone and Cauvery Delta zone were 53.4 and 48.14 per cent, respectively which indicated a drastic change in the floral diversity. ANOSIM gives the R values of 0.86 and 0.53 for Western zone and Cauvery Delta, respectively which belongs to category 'distinguish' and hence, indicates greater dissimilarity. The Shannon (H') indices for avian diversity at Western zone and Cauvery Delta were 1.23 and 0.76 which were invariably higher compared to coconut mono culture plantations (1.03 and 0.69). The dendrogram classified the data into 23 clusters and further analysis indicates that the coconut mono culture at Western zone did not form close cluster and exhibited minimum similarity with other samples. Cocoa as an intercrop in coconut enhances the faunal, floral and avian diversity. Cocoa cultivation also improves the soil physical, chemical and biological properties and lead to a better carbon and nutrient dynamics, apart providing additional income to the farmers with the existing land. Hence, it is a win-win strategy to cultivate cocoa as an intercrop under coconut plantations.

Key Words :
Cocoa plantations, Coconut monoculture, Biodiversity

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