Comparative analysis on ecosystem diversity indices using SAS computer programming

ABSTRACT

A comprehensive SAS (Statistical Analysis System) programming is proposed to be used in the calculation of biodiversity indices on paddy arthropods, as an example. An ANOVA was used in testing the significance effect of major parameters on diversity indices, followed by significant comparison testing between those parameters for each index. There are significant effects between type of planting (transplanted and direct-seeded) on richness, diversity and evenness indices. However, type of planting did not influence day and night diversity indices, except in species richness, N0 and R1. Diversity indices for the entire ecosystem were intermediate in values between those of the two types of planting. The transplanted field indicates higher richness and diversity. Novel features presented in this programme are; a large data set can be accessed directly with this program, and the user is free to explore variable effects through selection or elimination of the parameter(s) concerned. Hence, the various diversity indices can be calculated and analysed for different parameters simultaneously and continuously.

Keyword: Diversity indices; Biodiversity; SAS computer program; Paddy arthropods; Comparative analysis