

# **A pilot study on taxonomic sufficiency of invertebrate assemblages and functional dynamics in paddy fields<sup>1</sup>**

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## **Abstract**

Conservations of biodiversity have become the additional merit and obligation of agricultural production process. Based on the urgent requirements of information and trade-off of resource input, influence of taxonomic resolutions on bioassessments had captured more focus while reflecting the degree of artificial disturbances alters assemblage compositions and functional group dynamics. Our study conducts two issues in paddy fields : (1) Aims to correlations between species-level and coarse taxonomic resolutions (lower taxonomic level) (2) Discourse of the sufficient taxonomic resolution to instead of the assessment outcome of functional dynamics. The data of epigeal macrofauna in paddy fields of Fung-Nan village that surveyed for two cropping seasons during one year was used for comparison of correlations among taxonomic resolution and test through multivariate analysis. Analysis of similarity (ANOSIM) reveals both cropping season and agricultural practice notice significant different in species-level assemblage. However, coarser resolutions as class- and order-level show without significant cluster. Species-level similarity matrix had been highly correlated with genus-level and then decrease gradually by coarse taxonomic resolutions; Most correlated with functional dynamics was order-level then family-level was secondary, but dominant intensity suggest that order-level can't represent the species variation of parasitoids, visitors and pollinators. We conclude if focus on biodiversity monitoring, then species-level was proper resolution to adopt; if look after both reflecting the artificial disturbance and functional dynamics, family-level can work and had higher correlation with functional dynamics. Ecological requirement of family-level can use for agricultural production process and practical management in paddy fields.

Key words: paddy fields, taxonomic resolutions, agrobiodiversity, functional groups, bioassessments

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