Agglomerative Hierarchical Clustering Based on Morphmetric Parameters of the Populations of Labeo rohita

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Abstract : Labeo rohita populations from five geographical locations from the hatchery and riverine system of Punjab-Pakistan were studied for the clustering on the basis of similarities and differences based on morphometric parameters within the species. Agglomerative Hierarchical Clustering (AHC) was done by using Pearson Correlation Coefficient and Unweighted Pair Group Method with Arithmetic Mean (UPGMA) as Agglomeration method by XLSTAT 2012 version 1.02. A dendrogram with the data on the morphometrics of the representative samples of each site divided the populations of Labeo rohita in to five major clusters or classes. The variance decomposition for the optimal classification values remained as 19.24% for within class variation, while 80.76% for the between class differences. The representative central objects of the each class, the distances between the class centroids and also the distance between the central objects of the classes were generated by the analysis. A measurable distinction between the classes of the populations of the Labeo rohita was indicated in this study which determined the impacts of changing environment and other possible factors influencing the variation level among the populations of the same species.