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THE ORDINARY AND THE COMPOUND GEOMETRIC-ZERO-TRUNCATED POISSON MODELS FOR RUNS OF ONE SPECIE WITH RESPECT TO ANOTHER IN TRANSECTS THROUGH PLANT PLANTATIONS

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ABSTRACT

In order to investigate the underlying causes of segregation between two species of plants growing together in an area, Pielou (1962) fitted the ordinary geometric and the compound geometric distributions to the observed distributions of run lengths. In situations where interest is focused on groups of plants instead of individual plants along transects, the author suggested the zero-truncated geometric-Poisson distribution. This is to allow for the possibility that empty groups which constitute runs of length zero are unobservable. He however demonstrated that this distribution is not likely to perform better than the geometric. In this paper, the ordinary and the compound geometric-zero-truncated Poisson distributions are derived and fitted to the data contained in Pielou (1962). It was found that geometric-zero-truncated Poisson distribution is slightly better than the ordinary geometric distribution. The same observation holds for the corresponding compound distribution.

Keywords: geometric, Poisson, runs, transects, segregation