

## Study of the Lesser moth *Batrachedra amydraula* (Lep.: Batrachedridae) distribution based on geostatistical models in Khuzestan province

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### Abstract

*Batrachedra amydraula* (Ba) is one of the most important date pests in Khuzestane province. In this research cluster sampling method was carried out for studying the geostatistical models of its distribution during 2002-2005. Sites of sampling (including 65 plots) were distributed from 25.59 to 32.08 geographical longitudes and 48.8 to 50.1 geographical latitude in Khuzestane province. Variography of distributions on different sites were studied based on Spherical, Exponential, Linear, Linear to sill and Gaussian models and their Kriging maps were drawn. Results showed that the best model for the pest was Exponential. Nuggets were 0.52, 0.43 and 0.47 for three years, respectively. These results showed that bias of the pest damage estimation was low at the distances less than within sampling space. Effective ranges of variograms were 239.5, 228.2 and 354.8 kilometers for three years respectively. The data indicate that the mean damages of the pest are not correlated at more than these distances. Sill of models were 1.047, 0.855 and 1.152 for three years respectively which indicated that the population distribution in the region. Results of this research confirmed that the geostatistic method was a precise sample and low cost for evaluating the pest damage in integrated pest management.

**Key words:** Date palm, Lesser moth, Geographical distribution, Geostatistic, Khuzestan

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