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Colonization and Biology of Phlebotomus papatasi, the Main Vector of Cutaneous Leishmaniasis due to Leshmania major

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Abstract:

Background: Laboratory bred sand flies are essential for the study of different biological phenomena including the transmission dynamics of *Leishmania*. The aim of the study was to determine the suitable situation for colonization and maintenance of Iranian strain of *Phlebotomus papatasi* at laboratory conditions from an endemic focus of cutaneous leishmaniasis due to *Leishmania major*.

Methods: One hundred and thirty *P. papatasi* were collected by CDC miniature light traps and aspirator from indoors in Badrood, central Iran. The fly was maintained by the procedures of Modi & Tesh (1983) with minor modifications for 7 generations.

Results: Minimum and maximum rate of productivity was calculated to be 8.5 and 56.1 in F7 and F3, respectively and significant difference was observed among productivity of some generations ($P< 0.001$). The sex ratio ranged between 70(F1) and 101.8(F6). The mean duration of egg to adult emergence varied between 47.21±4.46 and 52.6±7.85 days. The life cycle was completed in 34.4 to 60 days at 26±1 ºC.

Conclusion: *P. papatasi* was colonized and maintained successfully for the first time as a laboratory strain. Using larval diet without liver powder is recommended. The blood of white hamster was preferred to golden hamster and guinea pig for the sand fly vector blood feeding at the insectary.

Keywords:

Sand fly ، Arthropod vectors

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