

TrichogrammatoideabactraeNagaraja (Hymenoptera: Trichogrammatidae): A potential biocontrol agent of rice leaf folder

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ABSTRACT: Rice leaf folder, *Cnaphalocrocismedinalis* (Guenee) is a major pest, found in many rice growing areas of Sri Lanka. Biological control of this pest is encouraged, due to ill effects of insecticide application on rice ecosystem. Use of egg parasitoids is advantageous over larval and pupal parasitoids, as they could destroy pest at egg stage. *Trichogrammatoideabactrae* (Nagaraja) is egg parasitoid of rice leaf folder present in rice ecosystem in Sri Lanka. The objective of this study was to assess the potential of *T.bactrae* as a biocontrol agent to use in rice leaf folder management. *T.bactrae* was reared on *Coccyracephalonica*Stainton, and fecundity, longevity and parasitism were assessed. Further, acceptance of stored host eggs and emergence of adult parasitoids from stored parasitized eggs were examined along with dispersal ability of parasitoid. *T.bactrae* showed 7.9 days adult lifespan with highest longevity 15 d and laid 55 eggs /female during first 5 days of which, 56 % of egg load was laid within the first day. There was a significant variation ($F=5.26$; $df=14, 89$; $P < 0.001$) in parasitism, 35-66 %, with the number of generations on *C.cephalonica* and parasitism steadily decreased as the number of generations increased. Acceptance of *C.cephalonica* eggs was significantly varied with different temperature ($F=187$ $df=1, 126$ $P < 0.001$). Mean acceptance at 4 and 8 °C were 30 and 42 %, respectively. Acceptance also significantly varied with the stored duration ($F=385$; $df=6, 126$; $P < 0.001$). Parasitized eggs of *T.bactrae* could be successfully stored under low temperature (4 °C) up to several weeks (40 d). With respect to dispersal ability of *T.bactrae*, in order to achieve >80 % parasitism, 150 parasitoids were required in 150 cm radius circle. Based on these results, it can be concluded that, the *T.bactrae* is a promising candidate to promote as a biocontrol agent.

Keywords: Biocontrol, Rice leaf folder, Sri Lanka, *Trichogrammatoideabactrae*

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