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Bio-Ecology of *Anacridium melanorhodon melanorhodon*, (Orthoptera: Acrididae) on *Acacia senegal* in North Kordofan State, Sudan

Mohammed Ibrahim, Abdalla Mohamed Abdalla

University of Kordofan, Fac. of Natural Resources and Environmental Studies, Sudan

Abstract

As consequences of changing land-use pattern in some areas of North Kordofan State, Sudan from natural pasture into plantations of *Acacia senegal* the main producer of gum arabic, the tree locust, *Anacridium melanorhodon melanorhodon*, (Orthoptera: Acrididae), which was once considered as sporadic pest in this area, now is considered as a major pest that jeopardised gum arabic production. This study was conducted in *Acacia senegal* plantations 35 km South East of Elobeid city, North Kordofan State during the years 2008–2009. The main objective was to investigate the bio-ecology of the tree locust. Field survey was conducted during study period and observation on the locust were recorded on weekly basis, whereas the laboratory study was conducted in Gum Arabic Research Centre in the University of Kordofan, Sudan. Results revealed that the eggs laid in moist soil during rainy season around mid-July and the estimated average incubation period was 40 days, eggs hatched giving nymphal stages that develop during August and early September, while the last nmphal stage which moult into fledgling adult in late September to October towards the end of the rainy season. The adult getting sexually mature in dry season but gonad restore activity at the onset on the coming rainy season. The correlations of adults and hoppers density showed that, there were variations on density of the nymphs and adults on the trees at different growth of the levels with means (4.71±1.257 & 8.20±0.034) and (0.05±3.636 & 0.31±0.107), respectively, whereas, the means of population structures were started from 0.00 to 14.0783 in 2008, whereas, in 2009 started from 0.00 to 4.8867. The hard and soft of males and females showed that the point of development started from mid-September to October and males were developed earlier than females, in each season. Moreover, insect feds more on the new sprout than the full developed leaves. The results obtained during this study may be of great value for further investigations on the locust bio-ecology and it may unequivocally pave the way for environmentally friendly locust management operations in the future.

Keywords: *Acacia senegal*, *Anacridium melanorhodon melanorhodon*, Gum Arabic Kordofan, locust bio-ecology, Sudan

Contact Address: Abdalla Mohamed Abdalla, University of Kordofan, Fac. of Natural Resources and Environmental Studies, 51111 Elobeid, Sudan, e-mail: khalil2004@hotmail.com