# Economic importance and distribution of egg parasitoids of cereal stemborers in Zanzibar

***Abdalla I. Ali[1], Abdullah Z. G[2], Nanqing Jiang[3] and Charles O[3]***

*(1) The State University of Zanzibar (SUZA), Department of Science, School of Education, Art and Science, P.O. Box 146*
*(2) Plant Protection Division, P.O. Box 1062, Zanzibar, Tanzania. Email: ppdznz@zanlink.com*
*(3) International Centre of Insect Physiology and Ecology, P. O. Box 30772-00100, Nairobi Kenya*

***Corresponding address:*** *aali004@yahoo.co.uk*

***Abstract***

*Maize is an important cereal crop in Zanzibar, especially in the coral rag areas where farmers cannot grow rice. Constraints which limit the crop yields are pests and diseases, poor soil fertility and weeds. Major pests are Lepidopteron stemborers which were reported to render yield losses of 30-73%. Surveys for infestation of maize by egg batches of lepidopteran stemborer and egg parasitoids were carried out in Zanzibar during two consecutive rainy seasons in 2004 and 2005 using quadrants method. The number of egg batches per plant and the egg emerging per batch were counted, and stemborer species were identified after the egg emergence. The results show recovery of three stemborer egg species of Chilo spp. and S. calamistis, three Trichogramma spp, one Trichogrammatoidea and four Telenomus egg parasitoids specie during the short and long rainy seasons. The Chilo specie was predominant among all egg batches and eggs during both seasons, followed by S. calamistis. Density of Chilo spp. egg batch was the highest in coral rag during both seasons (0.195±0.028 and 0.163±0.025 ($P<0.05$)) for short and long rains. Likewise, Telenomus thestor was the most abundant among Telenomus species found in short and long rainy seasons (1 7.4±3.0 and 31.6±7.6), followed by Te. busseloae and Te sudanensi. Telenomus spp. had higher discovery efficiency on S. calamsitis egg batch than Chilo spp. during both seasons. This was the first study in Zanzibar which investigated the abundance and distribution of eggs of the different stemborer species and associated parasitoids on maize on the Unguja island. The egg parasitoids recovered are an important source of mortality because the pest can be killed before it emerged and damaged the host crops. Therefore it is important to conserve biodiversity of egg existing parasitoids by reducing the use of pesticides in agricultural activities in Zanzibar.*

***Keywords:*** *Egg, Parasitoids, Stem borers, Mortality, Damage*