
Poster Session 1 – Population Dynamics

54 Species composition and community structure of small pest rodents (*Muridae*) in cultivated and fallow fields in maize growing areas in Eastern Uganda

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A capture-mark-recapture study was undertaken in eastern Uganda for three years to establish species composition and community structure of small rodents and their population dynamics in a maize associated cropping system. The study was conducted in two fallow field mosaic habitats that were dominated by *Lantana camara* and other perennial and annual grasses and shrubs (CMR 2 and CMR 4) and cropped fields that initially were planted with maize but subsequently rotated with other seasonal crops (CMR 1 and CMR 3). Ten species were recovered with *Mastomys natalensis* being the most dominant species (58.6%), *Muscus* spp. (16%), *Aethomys* spp (7.4%), *Lemniscomys barbarous* (5.2%), *Lophoromys* spp. (4.4%), *Arvicanthis niloticus* (0.9%), *Gerbilliscus* spp. (0.1%), *Glyphorhynchus* sp.(0.1%), *Steatomys* spp. (0.1%), *Grammomys* sp. (0.1%). Spatial variation in small rodent population abundance was highly significant ($F_{3,859.5}=4.706$, $P<0.004$). Using Tukey's (HSD) test, CMR2 showed the highest abundance (26 ± 3 animals/0.5 ha) which significantly differed from other grids. The lowest abundance was recorded in CMR1 (13 ± 3 animals/0.5 ha). The pattern of the individual species variation did not follow similar trends and were very variable and non-significant except for *Mastomys natalensis*. Temporal variation in terms of weather seasons showed significant differences in total small rodent population abundance ($F_{3,721.598}=3.859$, $P=0.012$). The post hoc comparison of treatment means showed higher abundances in the yearly second wet season (Wet 2), with 24 animals/0.5 ha significantly different from other seasons. The yearly first dry season (Dry 1) displayed the lowest trap catches (12 animals/0.5). There were also year-to-year changes in species population density and generally, with highest population peaks occurring in 2015 compared with year's 2016 and 2017. The study findings provide insights into the species diversity of important small rodent pest species found associated in maize farming systems in eastern Uganda and form basis for design of an appropriate ecologically sound management strategy.

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6th International Conference of Rodent
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