

Title: Agronomic and Rodent Pests Management by Maize Farmers in Rongai Division, Nakuru County

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Abstract: Rodent damage to maize and other cereal crops is a chronic problem to Kenyan farmers and occasional outbreaks are reported. According to a report by the Ministry of Agriculture in the year 2008, damage of between 1 and 5 % are common but damages of 20-100 % have also been recorded. In this study, a survey was carried out in Rongai Division, a cereal growing region in the Kenyan Rift Valley, to identify the general crop husbandry and farm enterprises, knowledge on problem rodents, farmers' perception of the rodent pest problem and their management practices amongst the small-holders. The data was collected using a structured questionnaire administered to 278 farmers in Rongai Division, Nakuru District. The structured questionnaire was based on three broad areas including agronomic practices, rodent pest problems and their control and farmer background information. Slightly over half (56.6%) of the farming population owned less than 5 acres and only 14 (5.1%) of the interviewed farmers owned more than 20 acres. The age of the respondents ranged between 18 and 90 years and averaged 43 years. Maize was grown by over 91 % of the farmers either for subsistence (48.8%) or for both subsistence and cash (49.~%). Weeding was manually done (92.4%) and 62.2% of the respondents weeded twice before harvesting the crop. The main mode of harvesting maize was cutting and 'stooking' (68.5%). Farmers described the rodent pests problem as a regular (65.7%) or an occasional (30.6%) phenomenon. Maize was damaged at all phenological stages and most damage occurred in the fields 53.6% and stores 39.2%. Control was done individually (94.2%) by use of chemicals (26.6%), cats and dogs (63%) and varying combination of other methods (10.4%). Control measures were undertaken only when rodent signs were seen (41.8%) or when damage was obvious (21.7%). Acute rodenticides were used because of the perceived efficacy (58.1%). Rodent control was considered as a very important (49%) or just important (45.2%) practice, Farmers preferred to continue controlling the rodents individually (46.5%) although some suggested group (21.9%) control. Information on rodent control was largely obtained from the neighbours (44.2%). The agro-vet stockists (20.9%), radio (14.0%) and agricultural extension agents (11.6%), respectively, also contributed to such knowledge. Perceived maize crop losses to rodents was moderate (65.1%) to very severe (22.3%) yet some (12.6%) farmers reported they experienced no loss. However, there was no significant difference in severity of losses with different methods of harvesting maize ($X^2 = 5.320$, $P = 0.256$). Occurrences of damage of ripened crop were more frequent (66.1%) under cut and 'stook' than other modes of harvest. Rodents were also ranked high (75%) as pests amongst the farmers who were using the cut and stook method. Thus, other modes of harvest (e.g. Cut and curry, direct removal of cobs) should be encouraged. Most farmers expressed need for control to be a continuous process, protecting the crop at all stages. Thus, there is a need to train farmers on an integrated approach to rodent pests control. It is also important to conduct research on some of the control methods identified by the farmers to check for possibility of recommending and up-scaling the same.

