

Avian and Rodent Pest Infestations of Lowland Rice (*Oryza sativa* L.) and Evaluation of Attributable Losses in Savanna Transition Environment

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Abstract : Rice (*Oryza sativa* L.) belongs to the family poaceae and has become the most popular food. Globally, this crop is been faced with the menace of vertebrate pests, of which birds and rodents are the most implicated. The study avian and rodents' infestations and the evaluation of attributable losses was carried out in 2020 and 2021 with the objectives of identifying the types of bird and rodent species associated with lowland rice and to determine the infestation levels, damage intensity, and the crop loss induced by these pests. The experiment was laid out in a split plot arrangement fitted into a Randomized Complete Block Design (RCBD), with the main plots being protected and unprotected groups and the sub-plots being four rice varieties, Ofada, WITA-4, NERICA L-34, and Arica-3. Data collection was done over a 16-week period, and the data obtained were transformed using square root transformation model before Analysis of Variance (ANOVA) was done at 5% probability level. The results showed the infestation levels of both birds and rodents across all the treatment means of the varieties as not significantly different ($p > 0.05$) in both seasons. The damage intensity by these pests in both years were also not significantly different ($p > 0.05$) among the means of the varieties, which explains the diverse feeding nature of birds and rodents when it comes to infestations. The infestation level under the protected group was significantly lower ($p < 0.05$) than the infestation level recorded under the unprotected group. Consequently, an estimated crop loss of 91.94 % and 90.75 % were recorded in 2020 and 2021, respectively, and the identified pest birds were *Ploceus melanocephalus*, *Ploceus cucullatus*, and *Spermestes cucullatus*. Conclusively, vertebrates pest cause damage to lowland rice which could result to a high percentage crop loss if left uncontrolled.

Keywords : pests, infestations, evaluation, losses, rodents, avian

Conference Title : ICAPM 2022 : International Conference on Agricultural Pest Management

Conference Location : Dubai, United Arab Emirates

Conference Dates : June 27-28, 2022