

69. EFFECT OF PRETREATMENT AND ITS DURATION ON GERMINATION AND GROWTH OF ADANSONIA DIGITATA SEEDS FROM THREE ZONES IN GHANA

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Abstract

The baobab (*Adansonia digitata*) is a significant indigenous species that provides substantial socio-economic and ecological benefits across sub-Saharan Africa. However, the tree has a low natural regeneration capacity, mainly due to a seed coat-imposed dormancy, which results in poor germination under natural conditions. This study investigated the effects of pretreatment methods, soaking durations, and seed sources on germination and early growth performance of *A. digitata*. Four pretreatment methods, including scarification, as well as varying soaking durations in acid, hot water, and ambient water, were applied to seeds sourced from three agroclimatic regions in Ghana: Kassena Nankana, Kumbungu, and Nandom. Scarification achieved the highest germination percentage (90%), the fastest emergence (7 days), and the highest mean germination rate (1.9 seeds/day), indicating rapid seedling establishment. Ambient water soaking for 48 hours was the most successful duration-based treatment, resulting in early emergence (8 days), a mean germination rate of 1.0 seed/day, and 60% germination. Acid and hot water treatments produced noticeably poorer results. Seed provenance also influenced germination outcomes, with seeds from Kassena-Nankana showing the highest germination percentage (54.6%). Pretreatment improved seedling growth parameters, including height, stem girth, and leaf number, indicating benefits beyond germination and into early seedling establishment. These findings have important implications for the conservation, domestication, and propagation of *A. digitata*.

Keywords: Pretreatment, scarification, conservation, germination, *Adansonia digitata*.

70. SILENT CARRIERS: PREVALENCE AND ANTIMICROBIAL RESISTANCE PROFILE OF ESBL-PRODUCING ESCHERICHIA COLI ISOLATED FROM LOCAL CHICKENS IN KPONE KATAMANSO MUNICIPAL ASSEMBLY, GHANA

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Abstract

Local chickens play a vital role in household nutrition, income generation, and food security across many Ghanaian communities. However, their close interaction with humans and the environment can facilitate the transmission of antimicrobial-resistant bacteria. This study assessed the prevalence and antimicrobial susceptibility of extended-spectrum beta-lactamase-producing *Escherichia coli* (ESBL-Ec) in local chickens raised in the Kpone Katamanso Municipal Assembly. A total of 100 pooled fecal samples were collected from 100 households. Screening for ESBL-Ec was performed on MacConkey agar supplemented with cefotaxime (MAC-CTX), and confirmation was done using the combination disc diffusion test. Antimicrobial susceptibility testing was carried out using the Kirby-Bauer disc diffusion method against ampicillin (AMP), cefoxitin (CFX), chloramphenicol (CHL), ciprofloxacin (CIP), gentamicin (GEN), imipenem (IMP) and tigecycline (TGC). ESBL-Ec was detected in 61% (n = 61/100) of the samples. All 61 isolates demonstrated resistance to AMP (100%). Resistance to CIP and TGC was observed in 32.8% and 29.5% of isolates, respectively, while resistance to CHL was relatively low (8.2%). Multidrug resistance was identified as 18% (n = 11) of isolates. Importantly, high susceptibility was observed to IMP, CFX, and GEN, with 98.4% of isolates remaining sensitive. The high prevalence of ESBL-Ec in local chickens highlights a potential public health concern, especially in densely populated communities. However, the relatively low multidrug resistance and retained susceptibility to key antibiotics offer some reassurance. These findings underscore the need for continued surveillance, prudent antibiotic use, and public education on hygiene and safe handling of backyard poultry to reduce risks at the community level.

Keywords: Antimicrobial resistance, Extended spectrum beta-lactamase, Local chicken