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Comparative performance of indigenous chicken ecotypes and Bovans Brown crosses

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ABSTRACT

Objective of study: Work previously done at Serere Agricultural and Animal Production Research Institute showed that crossbreeding Bovans Brown cocks and indigenous hens significantly increased growth rate, number of eggs per clutch and mean live weight at 20 weeks of age. While those findings could have been attributed to heterosis, it was not possible to delineate genetic and environmental (feeding) contributions. This study investigated the genetic and feeding contributions.
Methodology and results: New eggs (1-4 days old) of local chickens were purchased from households in Soroti, Sironko, Jinja, Masaka, Sembabule and Mbarara districts. In addition, new eggs of the same age of crossbred chickens (Bovans Brown x Local) were purchased from Soroti and Mukono districts. All eggs were hatched at the same time using a commercial hatchery at Mukono Agricultural Research and Development Centre. Hatchability was recorded. Local eggs from Sironko district had the highest hatchability (90.0%) followed by those from Sembabule district (87.0%) and the crossbred eggs (75% cross) from Soroti had the lowest hatchability (70.0%). Chicks from Sembabule local eggs were heaviest (30.53gm) on average at day 1 followed by the

crossbred chicks (75% cross) from Soroti which had average weight of 28.88gm at day 1. The smallest chicks (26.46gm) at day 1 were from the local eggs collected in Soroti district. All day 1 chicks were later transferred to Serere where they were managed in the same way and were fed *ad libitum*. Weights from day 1 to day 180 were recorded. Between day 1 and day 30, all chicks grew almost at the same pace but after day 60 chicks from Masaka grew fastest followed by those from Soroti district. Those from Sembabule were the slowest growing on average. The rest were between these two ecotypes. The biggest increases in body weights were recorded between day 60 and day 150. At day 180 (6 months) the weights of all ecotypes converged towards the same mean weight of 1636gm with no signs of further growth. *Conclusion and application of findings*: Some indigenous chicken ecotypes had better growth than the crossbred chickens. In addition, among the indigenous chicken ecotypes there were significant differences in growth reflecting a certain level of genetic variability. If the feeding were standardized and maintained *ad libitum* and management was uniform, the differences observed in growth could be attributed to differences in genes or differences in feed conversion.

Key words: Hatchability, growth, indigenous chickens, Bovans Brown, *ad libitum*