

**STUDY ON PHENOTYPIC VARIATIONS AND  
HAEMOPARASITES IN VILLAGE CHICKEN IN  
CASCADE AND OVITA AGRO-ECOSYSTEMS**

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by

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## ABSTRACT

Ancient Sri Lanka had a sustainable ecosystem where people maintained man-environment relationship in a passive way to have balanced ecosystems while utilizing for agriculture. Productivity of village chicken can significantly be reduced by Haemoparasitic infections. Thirteen farmers from Milleniya of Bandaragama in Kaluthara district (6.7144° N, 79.9891° E) representing Ovita agro-ecosystem and 12 farmers from Gamploa of Giribawa in Kurunagala district (8.1156° N, 80.1973° E) representing Cascade agro-ecosystem were selected. A total of 54 randomly selected mature village chicken from each research site (RS) was included in the study. Both qualitative phenotypic data (plumage color, shank color, sex, comb types, comb size) and quantitative data (shank length, wing span, and body length) were collected from each bird following FAO guidelines. For determination of hemoparasite prevalence, 34 Leishman stained blood smears from each site were examined under the light microscope using standard references as the identification guide. All collected data were analyzed using Minitab 17 and significance of differences of phenotypic parameters between two sites were evaluated using t – test. The both RS mainly consists with Normal village chicken phenotype (87% in Bandaragama & 91% in Giribawa). Further, 7% long legged and 7% crown chickens were identified in Bandaragama and Giribawa, respectively. There was no significant quantitative phenotypic difference of chicken within site ( $P>0.05$ ) though the difference is significant between 2 sites ( $P<0.05$ ). Shank length ( $P=0.011$ ), Body length ( $P=0.00$ ) and Wing span ( $P=0.0004$ ) was higher in female Normal village chicken in Bandaragama than the Giribawa. There was no significant difference between male village chicken in those two sites ( $P>0.05$ ). Many plumage color patterns were observed due to cross breeding. Most predominant comb type and shank color were single comb and yellow shank, respectively. Microfilaria is the only haemoparasite found in both sites and the prevalence of microfilaria in Bandaragama and Giribawa are 26% and 17.64%, respectively. This could be due to resistance of village chicken to parasitic diseases in the research sites. In conclusion, there was significant difference in phenotypic characters between female village chicken.