

Evaluation of the Quality Traits of Hybrid Eggs of Local Chicken Genotypes from Multi-Hybrid Crossing Technique

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Local chicken exist as the valuable genetic resource in Sri Lanka. However, there is lack of breeding and improvement programme for this kind of chicken in the country. In this context, a study was designed to analyze the quality traits of hybrid eggs from cross-bred local chicken. For this study forty local chickens were randomly allocated to four different crossing combinations. Each combination consisted of five hens and a cockerel. The crossing was designed in between village chicken hen and Hy-line white cockerel, village chicken hen and Girirajah cockerel, Naked-neck hen and Hy-line white cockerel and Naked-neck hen and Girirajah cockerel. Hundred hybrid eggs from each crossing were selected for analysis using Statistical Analysis Software (Version 9.0). The results of the study revealed that the egg weight (57.22 ± 2.71 g), yolk weight (20.00 ± 1.54 g), yolk albumen ratio (0.74 ± 0.01), specific gravity (1.11 ± 0.002) and shape index ($79.21 \pm 1.42\%$) were significantly higher ($P < 0.05$) in the eggs from Naked-neck X Hy-line white cross. Fertility ($79.64 \pm 2.29\%$), shell thickness (0.48 ± 0.003 mm), egg albumen weight (27.11 ± 0.94 g) and shell thickness (9.92 ± 1.45) were significantly higher ($P < 0.05$) in eggs from Naked-neck X Giriraja. From the study it was concluded that the Hy-line white and Giriraja can be used to improve naked-neck chicken flocks. However, village chicken population should need genetic improvement through different crossing program with other existing exotic breeds in Sri Lanka.

Keywords: Hybrid eggs, Hy-line White, Giriraja, Naked-neck chicken, Village chicken