

Sustainable Selection, Breeding and Hatchery Operation for Darag Native Chicken Production in Western Visayas, Philippines

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Abstract

Farmers in Panay Island raise Philippine native chickens known as Darag. However, raisers encounter problems on low fertility and hatchability, including high chick mortality when reared in high population densities. To address these concerns, this study aimed to establish a free range breeder flock, collect data on breeding and reproductive performance of Darag breeders, and develop protocols on culling and selection of breeders, hatchery, and range management. A 100-hen Darag nucleus farm and three 200-hen commercial Darag breeder flocks were established. Heritability estimates, reproductive, feed supplementation, and weights were computed. Results showed the following: heritability estimates for Darag plumage ($h^2=0.835$), brown egg color ($h^2=0.534$), yellow skin color ($h^2=0.452$), gray shank color ($h^2=0.493$), and pale-red earlobes ($h^2=0.524$). Other results are as follows: Age at point of lay, 19–24 weeks; egg produced per hen per year, 96–110; age when productive, 24–36 months; mean daily feed consumption, 50–75 g per bird; mean weight of eggs, 43.04 g; egg breakage, 0.5%–3.5%; viable eggs, 90%–99%; and egg fertility rate, 80.0%–96%. The mortality rates of the chickens at different stages: brooding stage, 4.17%; hardening stage, 5.68%; and growing stage, 7.5%. The cost to production is as follows: egg, PhP 4.17–6.25; day-old chicks, PhP 39.25–47.01; and ready-to-lay pullet/ready-to-breed cockerel, PhP 137.24–143.65. Our calculations reveal a production cost of PhP 796,530.00 for a 100-hen nucleus farm in 42 months and total sales of PhP 998,840.00, with a profit of PhP 202,310.00 and return on investment of 25.40%. A ranging area of 10 m² per breeder and 1:5 male-female ratio family units are stocking recommendation. Protocols on culling and selection of breeders, hatchery, and range management were developed.