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"Development on the margin"

Application of Risk-rated Profit Model Function in Estimation of Economic Values for Indigenous Chicken Breeding

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Abstract

The economic values for productive (egg yield, EY, average daily gain, ADG, live weight at 21 weeks, LW and mature weight, MW), reproductive (fertility, FER, hatchability, HA and broodiness, BROD), adaptability (survival rate, SR), efficiency (feed intake, FI) and aesthetic (egg weight, EW) traits were derived for three production systems utilising indigenous chicken (IC) in Kenya. The production systems considered were free range system (FRS), semi-intensive system (SIS) and intensive system (IS) and were evaluated based on fixed flock size and fixed feed resource production circumstances. A bio-economic model that combined potential performances, feeding strategies, optimum culling strategies, farmer's preferences and accounted for imperfect knowledge concerning risk attitude of farmers and economic dynamics was employed to derive risk-rated economic values. The economic values for all the traits were highest in FRS under the two production circumstances and decreased with level of intensification. The economic values for EY, ADG, LW, FER, HA and SR were positive while those for MW, BROD, EW and FI were negative. Generally the economic values estimated under fixed feed resource production circumstances were higher than those derived under fixed flock size. The difference between traditional and risk-rated economic values ranged from -47.26 to +67.11 % indicating that inclusion of risks in estimation of economic values is important. Traditional economic values were sensitive to changes in prices of eggs, live chicken and feeds. The results of this study suggest that improvement targeting EY, ADG, LW, FER, HA and SR would have a positive impact on profitability of IC production in Kenya.

Keywords: Economic value, indigenous chicken, production system

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