

Performance Test to Select Female Tegal Ducks Based On Production Characteristics

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Abstract	<p>This study aims to determine the increase in production capacity through genetic quality improvement using selection techniques with the production capability test method in Tegal ducks. The research was conducted using an experimental method, using a nested pattern experimental design, male as treatment, female as sub-treatment, offspring as replicates, and production characteristics as observations. The selection population of Tegal ducks consisted of 10 males, 50 females, and their offspring. Production characteristics recorded included egg weight, hatching weight, and egg production. Egg production measured was Hen Day Production (HDP) at the initial laying period for 90 days. Assessment of genetic quality using individual breeding values (BV). Each individual's breeding value is calculated, and then the estimated breeding value (EBV) results are arranged based on their rank. Selection of parent candidates is done by maintaining 25, 50, and 75% of the total population. Selection results are obtained by estimating the selection response using different selection intensities. The results showed that the average and standard deviation of the characteristics of egg weight, hatching weight, and percentage of egg production in Tegal ducks were 67.76 \bar{X}, $\hat{\sigma}$ 4.57 g, 40.40 \bar{X}, $\hat{\sigma}$ 2.16 g, and 63.33 \bar{X}, $\hat{\sigma}$ 10.89 %, respectively. Heritability values (h^2) and standard error of egg weight characteristics, hatching weight, and percentage of egg production in Tegal ducks were 0.47 \bar{X}, $\hat{\sigma}$ 0.032, 0.39 \bar{X}, $\hat{\sigma}$ 0.0589, and 0.512 \bar{X}, $\hat{\sigma}$ 0.071, respectively. The assessment for selection response was conducted based on three factors - egg weight, hatching weight, and percentage of egg production each week. The proportions were maintained at 25%, 50%, and 75%, respectively. The egg weight proportions were 0.46, 0.29, and 0.15, while the hatching weight proportions were 0.71, 0.45, and 0.23, respectively. The percentage of egg production each week was 47.92%, 30.18%, and 15.85%, respectively. The study's results revealed that the intensity of selection and selection response of the Tegal duck were higher when smaller proportions were used in the selection process. It should be noted that the production characteristics used in the selection process were different, which resulted in varying heritability values and selection responses. Overall, these findings suggest that careful consideration of the selection factors is necessary to achieve optimal results in the selection process of the Tegal duck</p>
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Author	Ir. SETYA AGUS SANTOSA, SPt, MP, IPM