



قسم إنتاج الدواجن



البحث الخامس : مشترك - مقبول للنشر في مجلة محلية متخصصة - مستخلص من رسالة

Selection responses for augmenting early growth rate in Japanese quail

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ABSTRACT

Throughout a selection experiment, which extended over five generations: the base and four generations of selection for augmenting early growth rate (GR) during the period from hatch to 21 days of age in Japanese quail. A total number of 8724 birds were used: 1726 in the base population, 5176 for the selected line (HGR₁₋₂₁) and 1822 for the control line. The most important results obtained as follows: Genetically, heritability (h^2) for all body weights (BW) showed moderate h^2 ranged from 0.19 to 0.29. The GR₁₋₂₁ positively correlated with all body weights weekly measured except BW at hatch (BW₁) with genetic correlations (r_g) ranged from 0.06 to 0.47, and a wide range of phenotypic correlation (r_p) ranged from 0.18 to 0.52.

The GR during different periods of growth had medium h^2 ranged from 0.17 to 0.28 and showed a wide range of moderate to high r_g with the selection criterion (0.15 to 0.70) and had a broader range of r_p ranged from 0.03 to 0.67.

The HGR₁₋₂₁ line in the 4th generation had the best growth performance for each of BW₇, BW₂₁, BW₂₈, GR during the periods 1-7, 1-14, 1-28 and 1-35 days of age with significant differences. The realized cumulative response after four generations of selection was 0.063 (6.30%) for GR₁₋₂₁, the cumulative correlated responses for BW's and GR's ranged from 1.19,g to 23.94,g and from 3.10% to 17.00%, respectively. Japanese quail showed quick response to selection for high and early growth rate during 1-21 days of age. The generations of selection indicated that selection for GR₁₋₂₁ was accompanied by an improvement in BWs and GRs traits so, improving growth performance genetically could be achieved through applying selection for growth rate during 1-21 days, furthermore, enhancement could be attained through selection for more generations.

Key words: Selection, early growth rate, direct and correlated response, Japanese quail.