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# Phenotypic Characterization of Desi Naked Neck Chicken and Its Association with Insulin-Like Growth Factor-I (IGF-I) Gene Polymorphism in Pakistan

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**Abstract :** The study was conducted to investigate the phenotypic features, morphometry and production potentialities of indigenous naked neck chicken (NN) of Pakistan under intensive management condition. A total of 35 NN chicks were randomly selected, and the experiment was performed at Poultry and wildlife research section NARC Islamabad for a period of 22 weeks. The predominant plumage color was black and golden while skin color was observed white. The average shank length, leg length, thigh length, keel length, chest breadth, head width, wing space, wing length, body length, body girth, body height and pubic bone width in adult males and females were 69.19 ± 3.34mm, 117.93 ± 4.42mm, 117.93 ± 4.42mm, 90.87 ± 6.53mm, 95.03 ± 4.56mm, 49.77 ± 2.53mm, 30.63 ± 1.50cm, 27.24 ± 2.71cm, 18.88 ± 0.65cm, 17.77 ± 1.01cm, 25.96 ± 0.56cm, 47.81 ± 1.41cm and 35.69 ± 4.09mm respectively. The average age and live body weight of NN chicken at sexual maturity were recorded as 165.85 days and 1269.38 g. While hen-day egg production of NN was recorded as 45%. The present study was aimed to investigate the existence of polymorphism at IGF-I gene in indigenous naked neck chicken through PCR based Restriction Fragment Length Polymorphism. Based on restriction analysis using Hinf I restriction enzyme, three genotypes were detected designated as AA, AC, and CC. Restriction analysis of PCR amplified product showed the presence of DNA fragments of 622, 378, 244 and 191, (genotypes). The PCR-RFLP analysis is easy, cost effective method which permits the easy characterization of IGF-I gene. This showed the investigated IGF-I genes can serve as good molecular markers for marker assisted selection (MAS) concerning growth related traits in chicken.

**Keywords :** Desi chicken, naked neck, morphology, morphometry, production potential, egg traits, egg geometry, IGF-I, growth, PCR- RFLP, chicken
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