Mitochondrial DNA D-Loop Analysis of South Western Nigerian Chicken

Abstract:
Mitochondrial DNA (mtDNA) D-loop segment was sequenced for a total of 98 individuals of domestic chicken from South Western Nigeria. Domestic chicken populations were: Anak titan (Israeli breed,n= 1), Frizzle (n= 16), Opipi (n= 5), FrizzleXOpipi (n= 5), Fulani (n= 4), Giriraja (Indian breed,n= 3), Normal (n= 55), Naked neck (n= 8), Yaffa (n= 1). The sequences of the first 397 nucleotides were used for the analysis. Seventeen haplotypes were identified in the samples, 15 for Nigerian indigenous chicken population, 1 for Giriraja and 1 for Anak titan from 23 polymorphic sites. Phylogenetic analysis shows that Nigerian indigenous and Anak titan chicken were all grouped under clade IV, while the Indian Giriraja was under clade IIIc. Clade IV had 16 haplotypes, while clade IIIc had one haplotype. AMOVA analysis indicates that 97.32% of the total sequence variation between haplotypes was present within population and 2.68% between populations. Our results suggest single multiple maternal origins for the South Western Nigerian domestic chicken.