

## Effect of Stocking Density during Brooding Period on Welfare Conditions of Broilers: A Case Study

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Assessment of broiler welfare is important to obtain information for making evidence-based decisions related to broiler production. The present study was undertaken to assess the effect of stocking density during brooding period on the welfare conditions of broilers. Seven hundred and eighty (780), day-old broiler chicks were randomly stocked at four stocking densities (SD=T1-T4) at brooding period (1-7 days); T1 = 50, T2 = 60, T3 = 70 (existing SD in the farm) and T4 = 80 chicks/m<sup>2</sup>. Stocking densities were reduced by half at the start of the 2<sup>nd</sup> week of the brooding period (8-14 days) with the growth of the chicks. There were three replicates per treatment arranged in a completely randomized design. All other management practices were provided optimally and those were constant between treatments. The welfare of chicks was measured by using the welfare measures; tonic immobility (TI) duration, plumage cleanliness, and footpad dermatitis (FPD) at end of the brooding period (14<sup>th</sup> day) and end of the finisher period (35<sup>th</sup> day). Plumage cleanliness and FPD were measured and calculated according to welfare quality protocol. The data were analysed using one-way ANOVA. Tonic immobility duration was significantly ( $p < 0.05$ ) lower in T1 compared to T2, T3, and T4 at end of the brooding period. Plumage cleanliness at the end of a brooding period in T1 was higher ( $p < 0.05$ ) compared to T2, T3, and T4. End of the finisher period, TI duration and plumage cleanliness were not significantly different among treatments. Footpad dermatitis was not recorded in any treatments. According to the results of the present study, TI duration was increased and plumage cleanliness was decreased with increasing stocking density. Thus, the lowest stocking density (50 chicks/m<sup>2</sup> from 1 to 7 days and 25 chicks/m<sup>2</sup> from 8 to 14 days) enhanced the welfare conditions compared to higher stocking densities.

**Keywords:** *footpad dermatitis, plumage cleanliness, tonic immobility*