

Broiler stocking density – impacts on welfare and productivity

Purpose of the study

Stocking density (SD) is an important management practice that impacts the birds as well as producer profit.

The broiler industry strives to ensure high animal welfare standards and to do this, management practices must be re-evaluated to consider changing genetics, new industry standards, and consumer interest.

The objective of this trial was to evaluate how broiler welfare and productivity change in response to SD.

What we did

A total of 6,181 Ross 708 chicks were raised to 34 d. Four SD were tested in 8 rooms, with 2 rooms/SD.

The SD were:

31, 34.5, 38, and 41.5 kg/m²

Each room had the same dimensions, with different numbers of birds. The feeder and drinker space was equalized on a per bird basis.

For the first week, the room was divided into two brooder sections.



What we found

Litter moisture. Decreased as SD was reduced (86 vs 79 % dry matter).

Footpad dermatitis. Better scores as SD was reduced. The percentage of birds with the best score increased from 63 to 88%.

Gait score. Gait score was unaffected by SD.

Fear response. The novel object test indicated birds reared at lower SD were less fearful.

Stress. Heterophil/lymphocyte ratios were highest in the 31 and 41.5 kg/m² treatments indicating higher chronic stress.

Behaviour. Birds in the lower SD spent more time at the drinker and less time resting.

Market age body weight. At 34 d, the broilers reared at the lower SD were the heaviest.

FCR. Feed efficiency was unaffected by SD.

Mortality. Mortality by period was unaffected. From 21-34 d, the percentage of infectious mortalities increased as SD increased.

Condemnations. SD had no impact on the incidence of condemnations.

Take home message

The impacts of SD are largely dependent on management at the barn. However, even under research conditions, differences were found between the treatments. The results of this study suggest that reducing SD for broilers results in improved welfare and performance as evidenced by reductions in litter moisture, footpad dermatitis, fear, stress, and infectious mortality as well as greater market body weights and feed consumption.



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