



# THE IMPACTS OF GRADED LEVELS OF STOCKING DENSITY ON THE PERFORMANCE, HEALTH, AND WELFARE OF TURKEY HENS REARED TO 11 WEEKS OF AGE

## PURPOSE OF THE STUDY

Stocking density (SD) can impact economic return for turkey production and can impact the birds' health and welfare. The majority of available turkey SD literature focuses on production parameters, with few studies focusing on behaviour and welfare parameters or both. The effects of SD on turkeys have not been consistent across studies with variations in density, environmental conditions, units of measure, gender, group size, and pen size, thus, making comparisons difficult. There have also been few studies that evaluate the effects of SD on hens, with more focus on toms, and most studies are 20-50 years old.

The purpose of this study was to evaluate the impacts of SD on the performance, health, and welfare of turkey hens to 11 weeks of age while equalizing confounding factors such as air quality and feeder and drinker space.

## METHODS

This study consisted of two trials, with 3,550 Nicholas Select turkey hens placed in each trial. The stocking densities evaluated were 30, 40, 50, and 60 kg/m<sup>2</sup> (estimated final density). The hens were housed in large open rooms (67.5m<sup>2</sup>) and feeders and drinkers were equalized on a per bird basis. CO<sub>2</sub> and ammonia were monitored daily and ventilation was adjusted to equalize air quality across all treatments. Performance was evaluated at 3, 5, 8, and 11 weeks. At week 8 and 11, health and welfare parameters (footpad lesions, gait scoring, feather condition and cleanliness) were evaluated, with incidence of aggressive damage recorded throughout the trials.

## WHAT WE FOUND

### Performance

Final body weight decreased as SD increased, with the lowest body weights at 60 kg/m<sup>2</sup>

During week 8-11, feed consumption decreased as SD increased and feed consumption was poorer in the higher SD treatments over the 11-week period

Feed efficiency, body weight gain, percent mortality, and flock uniformity were not affected by SD

### Health

Average footpad scores worsened at week 8 with increasing SD as larger lesions were observed, but no differences were noted at week 11

Average feather condition scores as well as feather cleanliness were poorer as SD increased, with the poorest feather condition observed for birds reared at 60 kg/m<sup>2</sup>

Incidence of aggressive pecking including culls for aggressive damage were highest in the low SD treatment of 30 kg/m<sup>2</sup> and decreased with increasing density

Gait scores/ mobility were not affected by SD



## CONCLUSIONS

High stocking density impacts production by negatively impacting final body weight and feed consumption. Higher stocking densities can also negatively affect turkey hen health and welfare because of poor feather condition and larger footpad lesions. However, it is important to note the highest incidence of aggressive pecking and damage was observed at 30 kg/m<sup>2</sup>. This indicates poorer welfare for hens housed at low densities, despite better performance.



SD - 30 kg/m<sup>2</sup>



SD - 60 kg/m<sup>2</sup>

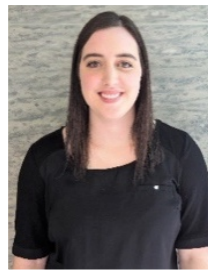


## ABOUT US



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