Preventing footpad dermatitis in broilers: the importance of ventilation

Contact dermatitis is diagnosed in the form of lesions occurring on the breast, hock skin and the footpads of broilers. Nowadays, footpad dermatitis, also called footpad lesions, is one of the most important quality items of broilers monitored to meet stricter animal welfare standards.

by L. Verhoijsen, Vostermans Ventilation, The Netherlands, www.vostermans.com

Footpad lesions affect the plantar region of the broiler's feet, noticed by erosions or ulcers on the ventral footpads. The severity of footpad lesions can vary between slight discolourations on a limited area to significant, severe swollen footpads as shown in the photograph.

Whenever severe lesions occur, broilers may undergo pain, questioning the welfare and the health of the animal. Additionally, a high incidence of footpad dermatitis is often associated with lower growth rates and increasing downgrades, directly affecting the farmer's income. Broilers which experience pain due to several lesions move, eat and drink less.

Although footpad dermatitis can have several causes, litter quality appears to be the most influential factor. But how do broiler producers maintain a good litter quality to avoid unnecessary losses and enhance animal welfare at farm level?

In a recent review, the multi-dimensional causal factors of wet litter have been investigated. This review included a survey of 15 people to rank the relative importance of environmental and housing factors contributing to wet litter.

Among the respondents were nutritionists, veterinarians and other experienced poultry professionals.

According to these respondents, management of drinkers and shed ventilation are seen as the most important factors influencing litter quality as illustrated in Fig. 1.

The litter quality is influenced by the design and management of the shed ventilation because ventilation controls the temperature and humidity of the air inside the house.

Footpad dermatitis in a broiler (Wageningen University & Research).

Monitoring both in-shed temperature and humidity is essential for making effective changes in ventilation measurement.

Proper control of the inside relative humidity will decrease the water absorption by the litter and reduces dripping of water droplets from condensation.

The research also found that inadequate ventilation can lead to poor air movement patterns such as too low incoming air-speeds allowing cold air to fall to the ground. This leads to more condensation at specific spots inducing wet litter.

Instead, ventilation should provide a uniform air flow to create uniform conditions throughout the broilers' house.

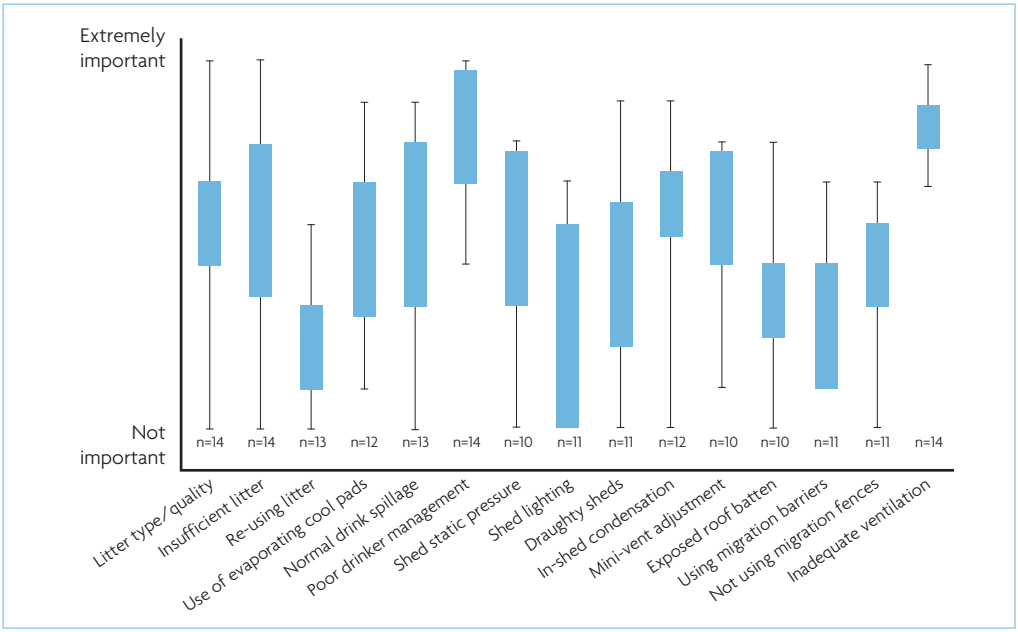
Local differences in temperature could, for instance, cause birds to crowd together impairing uniform litter drying and excreta deposition.

Hence, especially during minimum ventilation when the air change rate is low, the use of internal circulation fans is recommended.

Finally, litter quality is also very dependent on the evaporation rate. A compacted crust, or in other words, caked litter has a lower evaporation rate slowing down litter drying. Airspeed has a positive effect on the evaporation rate which is beneficial for broiler farmers using tunnel ventilated houses.

From the above, it can be concluded that the impact of ventilation on animal health and financial returns should not be underestimated: appropriate ventilation is crucial in preventing footpad lesions in broilers. ■

Fig. 1. Relative importance of environmental and housing factors contributing to the problem of wet litter.



References are available from the author on request via ventilation@vostermans.com