

GD studies the efficacy of live IBV vaccination

Ventilation and lighting affect vaccination

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The Dutch poultry sector invests a great deal of effort and capital into IBV vaccinations. These vaccines have proven to offer adequate protection under experimental, hygienic and small-scale conditions. However, field conditions are often quite different. GD Animal Health Service has been studying which factors affect vaccinations.

Practice

Various studies of IBV-vaccinated chickens that were infected with the field virus have shown that frequently a very significant percentage of inoculations (partially) failed, despite the vaccinations having been administered correctly. It is often unclear why it works better in one house than in another.

Field trials

The variable results of field vaccinations triggered field trials. This study followed as much as possible IBV spray vaccinations administered at two weeks of age. Information was compiled on the conditions during inoculation and the effect of the vaccine was measured using an IgM IBV ELISA blood test. Since the most animals by far were vaccinated using the spray method, the study concentrated on this approach.

Results

Chickens vaccinated while the lights were on demonstrated an average of 41% more positive samples in the blood test. This means they were better protected than chickens vaccinated while the lights were off. Chickens are often vaccinated with the lights off in order to prevent them moving around too much. This practice would appear to be rather self-defeating. The reason for this could be that chickens keep their eyes closed in the dark, while IBV vaccines work best when applied directly to the eyes.

Chickens inoculated with the spray while the ventilation system was switched off provided an average of 15% more positive samples in the IgM ELISA. However, vaccinations are often



administered with the ventilation on to prevent house temperatures from rising too far, or due to concerns that the ventilation would be left off after vaccination. This study demonstrates that temporarily switching the ventilation off promotes better uptake of the vaccine.

Conclusions

This field trial provides important indications that could be used to improve the efficacy of living IBV vaccinations. However, it is not possible to draw any conclusions about administering vaccinations via drinking water, as almost no one used this method of application in this field trial. For this reason we are continuing this study to obtain further information on the vaccination techniques used in daily practice. This expertise can be used to further improve the performance of these vaccinations.