

EFFECT OF OXO METHANE NANO PARTICLES AGAINST COCCIDIAL OOCYSTS

S. Sankaralingam, K.P. Neethu and K. Ashitha

Kerala Veterinary and Animal Sciences University Poultry and Duck Farm, Mannuthy, Thrissur, Kerala - 680 651

Received: 20.04.2017 Accepted: 28.04.2017

ABSTRACT

Oxo methane nano particle is tested for its 3-dimensional ability to destroy the coccidial oocysts in the poultry shed. One poultry brooder shed was treated with three per cent advanced molecule oxo methane powder sprinkled on the floor and other shed was left as such. Chicks were brooded in both the sheds and droppings of the birds were tested at six weeks of age. The result of this study revealed that oxo methane did not affect the coccidial oocyst, hence this may not be used as disinfectant against coccidiosis.

Keywords: Oxo methane, poultry, coccidia, oocyst, disinfectant

INTRODUCTION

There are several disinfectants like ammonium hydroxide, ammonium sulphate, calcium hydroxide (slated lime) etc., used for removing the coccidial oocysts from poultry sheds. Oxo methane nano particle is reported to be an effective disinfectant, which works 3-dimensionally by slow and steady release into the air to eliminate microbes like bacteria, virus, fungus etc. and their *spores*. The present study was undertaken to study the effect of oxo methane nano particle on coccidial oocyst.

MATERIALS AND METHOD

One brooding shed of University Poultry and Duck Farm, Mannuthy which was cleaned as per standard downtime cleaning followed by white washing, was disinfected by sprinkling the 3 per cent advanced molecule oxo methane powder dispersed in calcium carbonate and silica powder. The powder was sprinkled at the rate of one gm per sq. ft. area. The other brooding shed was cleaned and white washed and kept as control. In both the sheds, chicks were brooded at the rate of one bird per 0.7 sq. ft. area. All chicks were brooded under uniform conditions of management. At six weeks of age, ten chicks each from the treatment group and control group were taken from different pens at random and put into the individual metabolism trial cages for collection of dropping from each bird. Fresh dropping was collected from each bird and kept under refrigeration temperature till examination. The faecal coccidial oocyst count was obtained by Mac Master counting technique (Hansen and Perry, 1994).

Four grams of dropping was taken in a mortar and 56 ml of floatation fluid (saturated sodium chloride) was added and the contents were mixed thoroughly and faecal suspension was strained through a tea strainer. A small quantity of filtrate

was taken using a Pasteur pipette and filled both sides of the counting chamber and waited for five minutes. After that examined the chamber for oocyst under 10X magnification of microscope (Fig. 1). The number of oocyst per chamber was calculated as follows.

The oocyst count of two chambers were added and multiplied by 50. This count was statistically analysed by *t* test.

RESULTS AND DISCUSSION

The result of this study showed that the control population were having a mean oocyst per gram (OPG) count of 22885 ± 8971.96 and the treatment population contains 25165 ± 10691.65 revealing no significant difference between them. This shows that the chemical oxo methane nano particle does not show any 3-dimensional effect on oocysts present in the poultry house. As a result, the oocyst became sporulated under favourable environment and they were ingested by the chicks. The wide variation in the oocyst count among the birds of control and treatment population may be due to the difference in the organism presence in the different areas of the poultry shed. Similar greater variation in number of oocysts shed in faecal samples was reported by Long and Rowell (1975).

As the coccidial oocysts were not destroyed by the oxo methane powder sprinkled on the floor of the shed during downtime, coccidiosis was spread to the next generation chicks. Contrary to this study Ravichandran (2017) revealed that the oxomethane nano particle reduced all microbial content when sprinkled on the floor of the house and Parthiban (2017) revealed oxo methane teat dip significantly reduced the microbial count development

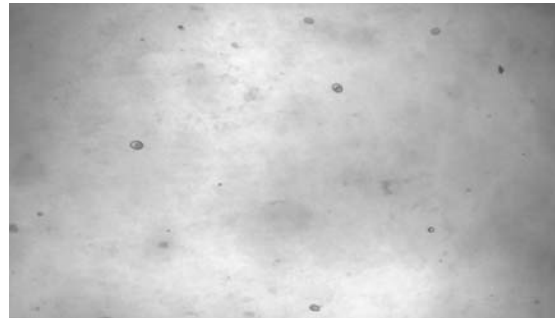


Fig. 1. Presence of coccidial oocyst under microscope

between milking and also the pungent odour of this chemical reduced the fly menace.

SUMMARY

This study reveals that the advanced molecule of oxo methane powder does not have any 3-dimensional effect on coccidial oocyst.

REFERENCES

- Hansen, J. and Perry, B. 1994. *The Epidemiology, Diagnosis and Control of Helminth Parasites of Ruminants*. 4th ed. International Laboratory for Research on Animal Disease, Nairobi, 74.
- Long, P.L. and Rowell, J.G. 1975. Sampling broiler house litter for coccidial oocysts. *British Poult. Sci.* **16**: 583-592.
- Parthiban. 2017. Controlling mastitis with Clean O Max Antiseptic. Veterinary Assistant Surgeon, Veterinary Dispensary, Palasamudram, Chittoor, Andhra Pradesh, India, *Pers. Comm.*
- Ravichandran. 2017. Controlling bacterial, virus, fungi or microbes with SUPERDIS powder Antiseptic. Veterinary Assistant Surgeon, Veterinary Dispensary, Vedyangadu, Pudur, Tamil Nadu, India, *Pers. Comm.*