NEW APPROACH IN THE CONTROL AND TREATMENT OF TROPICAL FOWL MITE (Ornithonyssus bursa) INFESTATION IN A BROILER BREEDER FLOCK UNDER PHILIPPINE CONDITIONS

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INTRODUCTION

Ectoparasites particularly lice and mites are common inhabitants of domestic chickens (Gallus gallus domesticus) but their effects on the general condition of the birds are oftentimes overlooked. Ectoparasitic infestation of fowls are rarely fatal but heavy infestation causes anemia, retarded growth, emaciation, lowered resistance to viral, bacterial and protozoan infections, loss of their vitality and greatly lowered egg production. (Manuel MF, 1981)

Tropical fowl mite (TFM), Ornithonyssus bursa, is a common avian parasite found on diverse bird species worldwide. In the neotropical region, O. bursa is present in wild birds, but it may also infest poultry and bite humans. Little is known about the ecology and epidemiology of this parasite. (Arce et. Al.,2018)

In the Philippines, entomologists, parasitologist and veterinary scientists presumed that common chicken mite is Dermanyssus gallinae. This apparently stems from a library listing made by Mallari in 1937 of the parasites of domestic animals which entirely disregarded the geographical distribution of species. Among other parasitic mites D. gallinae was listed therein as one of economic importance on fowls in the country. Collection of mites parasitic on sitting hens and roosting birds and those from nest and debris under chicken cages reveal that the species involved is Ornithonyssus bursa, a member of the family Macronyssidae. Specimens on hand come from the provinces of Laguna, Nueva Ecija, Nueva Vizcaya and Isabela, all on Luzon island.

Common practice in controlling mite infestation include using organophosphates like malathion (spray and dipping) and carbamates like carbaryl (spray) which are agricultural insecticides that are highly toxic and hazardous to humans and animals. Spinosad® is also used via spray on the vent area but all eggs must be removed before treatment, which is difficult and laborious. In some breeder and layer flocks extra-label use of ivermectin has been used to control mites.

Exzolt® (active ingredient fluralaner) is a systemic acaricide with a unique drinking water application approved in 55 countries worldwide for use against Poultry Red Mite (PRM) and/or Northern Fowl Mite (NFM) in pullets, breeders and layer hens with zero-day egg withdrawal time.

STUDY AIM

To determine the efficacy of Exzolt® in the control and treatment of tropical fowl mite infestation in a broiler breeder flock.
METHODOLOGY

The study was conducted in Mindanao using 32-week-old broiler breeders. The trial flock composed of 10,427 females and 893 males placed in one house; 6 other houses on the farm remained controls.

Mites were manually collected from vent and feathers, placed in containers with 70% ethanol and sent to the College of Veterinary Medicine, University of the Philippines Los Baños for identification.

Exzolt® was given twice, 7 days apart, with a dose of 0.5 mg fluralaner per kg body weight (BW) (equivalent to 0.05 mL Exzolt/kg BW). Treated birds were confirmed positive for mite infestation via vent checking before treatment. First treatment was given on June 30, 2018 at the age of 32-4 weeks (228 days) followed by second treatment on July 7, 2018 at the age of 33-4 weeks (235 days).

Mite infestation monitoring for blood sucking mites was done via visual vent and feather check, observing for crawling and feeding mites on less feathered areas. A total of 79 birds in 40 different locations inside the house that was treated with Exzolt were monitored on a weekly basis for the presence of mites to determine the efficacy of the product.

RESULTS

Mite identification results show that the flock was infested by Tropical Fowl Mite (*Ornithonyssus bursa*) and some Feather Mites (*Pterolichus obtusus* and *Megninia cubitalis*). Pictured below are the results of samples sent for mite identification at the College of Veterinary Medicine, University of the Philippines, Los Baños, Laguna.

**Graph 1.** Tropical Fowl Mite infestation level before and after treatment of oral fluralaner
Graph 1. shows that 79/79 birds from 40 different locations inside the building are 100% positive for crawling mites using vent and feather check monitoring before fluralaner treatment. Drop in % birds infested was observed 1 week after the first treatment from 100% birds infested to 0% or negative for crawling mites. Negative (0%) infestation continued up to 8 weeks after the 1st treatment. Re-infestation occurred at 41-4 weeks when 3.80% or 3/79 birds were found with crawling mites. A possible reason for the re-infestations is that not all chicken houses on the farm were treated.

CONCLUSION

Administration of Exzolt ® (active ingredient fluralaner) via drinking water was used as a new approach in the control and treatment of TFM infestation in a broiler breeder flock reducing mite infestation from 100% infestation level to 0% infestation level 1 week after 1st treatment up to 8 weeks from the 1st treatment.

ANNEX


Cobb 500 Breeder Management Supplement, Female Fast Feathering.