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tive neutralization of viral load will reduce the damage and other serious complication. Also, IgY therapy is best due to its short half life span (about 36 hours) which will help in easy elimination (Silva and Tambourgi, 2010).

This Heterogeneous immunoglobulin therapy is one of the alternative treatment regimens in animals, especially CPV 2 infection. However, more number of animals to be studied about the usefulness of heterogeneous immunoglobulin (IgY) therapy in CPV 2 infected puppies.

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Lousiness in a Nandanam Variety of Turkey (*Meleagris gallopavo*)

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Abstract

The present study records severe lousiness in a Nandanam variety of male turkey maintained in an organized poultry farm. The lice were collected, processed and identified based on morphological characteristics. Coexistence of two species of lice viz., *Oxylipeurus polytrapezius* (the slender turkey louse) and *Menacanthus stramineus* (Body louse), and was observed along with nymphs, larvae and numerous nits.

Key words: Turkey lice, *Oxylipeurus polytrape-*

zius, *Menacanthus stramineus*

Turkey farming in India is fast growing and raised for meat and egg production.. Parasites play a major role in affecting the health and well being of turkeys. Different ectoparasites such as lice, mites, fleas and ticks infest turkeys (Lane *et al.* 2006). Lice are one of the major ectoparasites of turkeys. Severe lice infestation leads to anemia, irritation, stress, loss of body weight, poor feed conversion efficiency and decline in egg production. Heavy infestation can also cause mortality in poults. Reports about turkey lice in India are scanty

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Fig.1: *Oxylipeurus polytrapezius* (40X)



Fig.2: *Menacanthus stramineus* (40X)



Fig. 3: Larval stage (100 X)



Fig 4. Nymphal stages (100X)

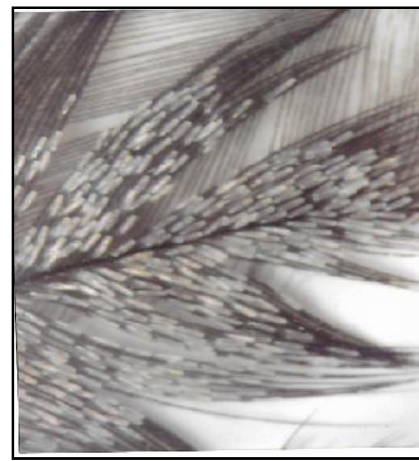


Fig 5. Nits in feather (4X)

(Alwar and Lalitha, 1960). Therefore a report is being placed on record.

Materials and Methods

Nandanam variety turkeys maintained in an organized poultry farm near Potheri, Kancheepuram district, Tamil Nadu were found infested with lice and their developmental stages. They were collected in 70% ethanol in containers and brought to the laboratory. Lice were then boiled with 10 % KOH for 10 min, dehydrated in ascending grades of alcohol, cleared with lactophenol and mounted in Canada balsam and were identified based on the keys provided by Emerson (1962).

Results and Discussion

Two species of lice viz., *Oxylipeurus polytrapezius* (slender turkey louse) and *Menacanthus stramineus* (Chicken body louse) were identified. *Oxylipeurus polytrapezius* was slender with elongate head nearly the same width of the thorax and abdomen. Paramere of the male genitalia was broadly curved inward. These lice were characterized by highly sclerotized tergal, sternal and paratergal plates on the abdomen (Fig.2). These lice were seen in wing feathers especially between barbules. Perusal of literature did not reveal occurrence of this turkey lice from India. However, Alwar and Lalitha (*loc. cit*) reported similar kind of turkey louse, *Lipeurus*

gallopavonis in Madras. It was reported from Iraq (Al-Mayali and Kadhim, 2015) and US (Lane et al. loc.cit). *Menacanthus stramineus* is the body louse of poultry and found infesting turkey. The head was almost triangular in shape and the forehead was armed with of spine like processes ventrally. Anterior margin of head was broadly convex with fully exposed maxillary palp and club shaped antennae concealed beneath the head. Abdomen was elongated and broadly rounded posteriorly with two dorsal rows of setae on each segment. (Fig.2). Occurrence of *Menacanthus stramineus* was reported in chicken all over the world. However reports about *Menacanthus stramineus* in turkey were scanty (Fabiyyi et al., 2017; Lane et al., loc.cit; Rassouli et al., 2016; Raezaei et al., 2016). However, Alwar and Lalitha (loc.cit) reported this louse in turkey from Madras. Larval (Fig.3) and nymphal stages (Fig.4) of lice were also collected from the turkey. Numerous nits were found attached to the feathers in clumps (Fig.5). However these findings were not reported earlier.

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The Combination Effect of Probiotic Prebiotic Lactic Acid Bacteria on Efficiency of Feed Usage on Broiler Chicken

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Abstract

This study aimed to replace antibiotics that have been used for antimicrobial activity for years with probiotics. T0: normal feed, T1: feed+probiotic *L.acidophilus*, T2: feed+probiotics *L.casei*, T3: feed+probiotics *L.fermentum*, T4: feed+probiotic *L.plantarum*, T5: feed+probiotic *Pediococcus*, T6: feed+mixture of probiotics. Two research stages: 1.basic feed: 23% protein (1st-3th weeks

age), 2. grower-finisher feed: 21% protein (3st-5th weeks age). Result of the research: significantly different feed efficiency, the highest yield on T6, which was provided with feeding+mixed probiotic (*L.acidophilus*, *L.casei*, *L.fermentum*, *L.plantarum*, *Pediococcus*).

Key words : Probiotic Prebiotic, Lactic Acid, Feed Efficiency, Broiler

The issue of avoiding antibiotic resistance is one reason to exploit natural resources

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