SHORT NOTE [NOTA CORTA]

PARASITIC MITES IN BACKYARD TURKIES

[ÁCAROS PARÁSITOS EN GUAJOLOTES DE TRASPATIO]

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ABSTRACT

The aim of the study was to know and describe the parasitic mites in backyard turkeys. The mites were obtained by hand from 30 backyard turkeys in Oaxaca’s Coast region, Mexico; the mites were mount in adhesive paper and wash with the 200X lens in a computer optical microscopy, the parasites size was determined in the pictures obtained by the microscopy software, the images were sized using a specialist software, which relate the number of pixels in the picture with the size of the observation field. The species indentified were Dermanyssus gallinae, Megninia ginglymura and Ornithonyssus sylviarum, the last two described for first time in backyard turkeys in Mexico.

Key words: Dermanyssus gallinae; guajolotes; Megninia ginglymura; Ornithonyssus sylviarum.

INTRODUCTION

Mites are between the principal external parasites that affect the aviculture (Arends, 2003); infested pouls, wild birds, farm workers and equipment are frequently the infestation source (Axtell, 1999). Nevertheless, in Mexico the backyard turkey’s mites have been studied scarcely. The turkey (Meleagris gallopavo gallopavo) is a domestic fowl which traditionally is breeding in backyard, were frequently grazing during the day and sleep near the owner’s house (Camacho-Escobar et al., 2008a), this situation turns out into a great risk due to a great number of pathogens and parasites (Camacho-Escobar et al., 2008b). Recently has been reported the presence of Pteriolichus obtusus (Quintero, 1993) and Dermanyssus gallinae (Camacho-Escobar et al., 2009a) in backyard. The objective of this work was to identify the parasite mites in the backyard turkeys in Oaxaca’s coast.

MATERIALS AND METHODS

Mites were obtained from 30 backyard turkeys, examined during July and August of 2008 in San José Manialtepec, Tututepec Santa María Cortijo, Puerto Escondido, Mixtepec, Río Grande, Tututepec and La Soledad, Tututepec; in Oaxaca’s Coast Region, Mexico, between the coordinates 16° 45’ latitude north
and 96° 20’ longitude east. The turkeys were breeding in the poultry house of the Universidad del Mar experimental camp. Mites were obtained from a sanitary routine monitory inspection at turkeys arrive to the university facilities. That individual inspection was to identify presence of signs, injuries, parasites, or any other sign of morbid manifestation. The parasites were collected by hand from the dorsal region and under the wings, then it were posted in adhesive paper, for its posterior direct observation with a computer optical microscopy, brand Digital Blue® model QX5® with the 200X lens; there were obtained pictures by the microscopy’s software (Camacho-Escobar et al., 2009b).

Them, using the Screen Calipers Ver. 4.0 software (Iconicos, 2006) and mites dimensions were calculated, from the picture pixel’s number related with a know measure proportionate by the microscopy. For the mites identification specialized texts identification keys (Greiner, 1994; Hall, 1985; Mehlhorn y Piekariski, 1989; Mullen y Oconnor, 2002) were used.

RESULTS AND DISCUSSION

Mite Megninia gingymura, Megnin 1877 (Arthropoda, Arachnida, Acari, Astigmata, Analgidae) was identify, also known as feather mite (Figure 1). One specimen was collected. Its dimensions were 513 μm long and 247 μm wide. It was observed a male with the characteristic develop in the third pair of legs, tarsus like spine in the two first pairs of legs, like the one reported by Santa Cruz et al. (2008).

The Menignia genus mites that affect the feathers of different species of domestic and wild birds, were reported in technical and backyard commercial layers farms in diverse countries around the word like Argentina, Israel, Sweden, Cuba, Brazil and USA (Gonzáles et al., 2003; Janson et al., 2004; Payne et al., 1990; Rosen et al., 1998; Santa Cruz et al., 2008; Tucci et al., 2005), causing feather loses, skin irritation, head, neck and dorsal region lesions, nervousness, pruritus and 10-20% egg production losses (Rosen et al., 1998; Tucci et al., 2005; Santa Cruz et al., 2008), could be the principal parasite in the commercial farms.

Hypothetically this mite comes from the wild turkey, and with domestication and later distribution around the world, passed to other avian species (Gaud et al., 1985). This is the first report of Megninia gingymura in Mexico’s backyard turkeys.

The northern poultry mite Ornithonyssus sylviarum, Canestrini and Fanzago 1877 (Arthropoda, Arachnida, Acari, Analgidae), from back yard turkeys in the Oaxaca’s Mexico, coast: In vivo observation by computer optical microscopy with 200X lens.

Figure 1. Feather mite Megninia gingymura, Megnin 1877 (Arthropoda, Arachnida, Acari, Astigmata, Analgidae), from back yard turkeys in the Oaxaca’s Mexico, coast; In vivo observation by computer optical microscopy with 200X lens.
making this parasite a potential danger to public health. This specie has a complete life cycle on the bird body, and can last at least five days (Axtell, 1999). This is the first report of *Ornithonyssus sylviarum* in Mexican backyard turkeys.

**Figure 2.** Northern fowl mite *Ornithonyssus sylviarum*, Canestrini and Fanzago 1877 (Arthropoda, Arachnida, Acari, Mesostigmata, Macronyssidae), from back yard turkeys in the Oaxaca’s Mexico, coast; *in vivo* observation by computer optical microscopy with 200X lens.

*Dermanyssus gallinae*, De Geer 1778 (Arthropoda, Arachnida, Acari, Mesostigmata, Dermanyssidae) known as avian red mite, was collected too in backyard turkeys, posted *in vivo* with post paper and identify with computer optic microscopy (Figure 3). The size of the unique specimen studied was 341 μm long and 178 μm wide. Of this specie are distinctive the large cheliceraes with whip form (Hall, 1985). The distribution of this mite can be by contact with other infested birds or with wild birds (Axtell, 1999). This parasite is bloodsucker and it is one of the principal external parasites of the commercial poultry (Högland et al., 1995, Yazwinski et al., 2005) and it was identify on backyard layers too (Hernández-Divers et al., 2006); but frequently is reported on wild birds, because it is a common parasite (Garvin et al., 2004). This mite specie could be Saint Louis encephalitis vector (Smith et al., 1944) and for *Erysipelothrix rhusiopathiae* etiological agent of avian erysipelas (Chirico et al., 2003); it was related like vector that contribute with the east equine encephalitis virus too (Garvin et al., 2004). This mite is frequently found in poultry farms (González et al., 2003; Jansson et al., 2004) and it is very difficult to eradicate because in their life cycle, they are on the bird only during the night, the rest of the day are in the floor or in other places (Axtell, 1999). In Mexico it was reported on backyard turkeys (Camacho-Escobar et al., 2009a) and barn swallow (Estébanez-González, 1997).

**Figure 3.** Poultry red mite *Dermanyssus gallinae*, De Geer 1778 (Arthropoda, Arachnida, Acari, Mesostigmata, Dermanyssidae), from back yard turkeys in the Oaxaca’s Mexico, coast; *in vivo* observation by computer optical microscopy with 200X lens.

In general, there are few reports about mites that affect poultry in Mexico, it was reported the presence of *Pteriolichus obtusus* on backyard turkeys in Tabasco state (Quintero, 1993), and *Dermanyssus gallinae* like parasite on backyard turkey in Oaxaca’s Coast (Camacho-Escobar et al., 2009a); in Yucatan state were reported on birds pets infested by mites of the genus *Knemidocoptes* and *Cytodites* (Domínguez et al., 1993).

**CONCLUSIONS**

It is reported by first time the presence of the mites *Megninia ginglymura* and *Ornithonyssus sylviarum* on backyard turkeys in Mexico, and confirm the presence of *Dermanyssus gallinae*.

**ACKNOWLEDGMENT**

The authors thank to the Universidad del Mar for the support for this study, for the internal project “Identification of turkey’s ectoparasites and use of plants with insecticide property for its control” with unit programmatic code 2II0902.
REFERENCES


Submitted August 10, 2009 – Accepted January 14, 2010
Revised received January 28, 2010