

Diagnosis of Ticks *Boophilus annulatus* (Say, 1821) Prying on Cows in Tikrit/Iraq

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ABSTRACT

The study aimed to investigate the tick insect on cows in Tikrit city for period from the beginning of November 2018 until the end of March 2019. The results of the present study showed that cows were infected with one type of tick, *Boophilus annulatus* (say, 1821) parasitic on cows in atrium areas and the animal chest, rate of infection was 23.076%. The diagnosis was made based on phenotypic and standard traits.

Keywords- Cows, parasites, tick insect, Iraq.

I. INTRODUCTION

The word Ticks means all species that fall under Ixodidae family and Argasidae family. A host parasite, whether a plant or animal, lives and sticks to it throughout its life or for a certain period to take food from it, where it feeds on vegetable juices or blood or lymph only (Wall & Sheaver, 2001). The tick was classified into two families: hard ticks and soft ticks. It is called a solid tick because it has a shield Scutum, a brown ketinic steel located on dorsal surface and is broad and large in males, while in females is a small part of the front area and may be geometric polygon, tick body covered with short hair or be naked and the outer structure of the skin (Eisenmenger & Zetner, 1985).

The hard tick is classified under Arthropoda division of Arachnida class as Acarina order family of Ixodidae (Soulsby, 1982). The life cycle of hard ticks includes four stages: an egg, a larva, a nymph and an adult. These stages take between six weeks to two years, and female lays about 100 to 18,000 eggs. The stages vary according to host's requirements. stages or need two or three hosts (Foreyt, 2001). Ticks play a serious role in the general health of humans and animals, where the life of

tick parasite causes a great loss of blood of agricultural animals and poultry and affect the amount of milk and skin quality and weight of the animal. Yellow fever, cardiac edema in sheep, goats, livestock, plague, Anthrax, Texas fever in cattle and other diseases, and tick bites cause biopsy and inflammation in the affected area (Soulsby, 1982).

Ticks affect ruminant fields in many respects, including health, veterinary and economic in all world countries and transfer of bloody and its toxins, leading to a decline in production and deterioration of health of the animal (Kebede & Fetene, 2001). Hard ticks *Hyalomma* and *Boophilus* are the most important and responsible species for the transmission of blood parasites *Theileria*, *Babesia* and *Anaplasma* and cause significant health and economic problems in producing countries (Foreyt, 2001).

Hawa *et al.*, (2005) noted that there are seven species of parasitic ticks on buffaloes and cows, of which only four species are responsible for the transmission of the parasite *Th. annulata* causing yellow fever, and reported that climate variables have a direct effect on ticks and its relationship to the spread of yellow fever in animals, The number of ticks peaked in spring and autumn, which corresponded to the high rate of infection in ruminant fields.

Wall&Sheaver (2001) mentioned the importance of the role of ticks of *H. anatolicum*, *H. detritum* and *H. marginatum* in the transmission of parasite *Th. Annulata* after feeding on the blood of vertebral hosts, to suit their tissues for growth and reproduction the parasite. In addition, losses from ticks and disease transmitted annually in ruminant fields, causing veterinary problems in some countries where the economy is based on animal husbandry (Kebede & Fetene, 2012). Tick-borne diseases cause large disease outbreaks of up to 80% between ruminant populations in the world and in tropical and subtropical regions. Their direct and indirect impact is not only on the reduction of milk and meat, but also on their daily income and agricultural work in addition to high mortality rate due to Feeding ticks on host blood (Robson et al.,1968).

The study aimed to investigate the tick insect on cows in Tikrit city and diagnosed it on phenotypic and standard traits.

II. MATERIALS AND WORKING METHODS

1- Field study: The number of cows tested was 91 cows and 74 insect ticks were collected on cows in Tikrit city for the period from beginning of November 2018 until end of March 2019, and visits were twice a week to the gathering areas where there are large concentrations of cows, Cows grazed in the barns attached to the houses.

2- Laboratory study: cows were examined and then were collected ticks from all parts of animal discount by forceps and medical cotton containing ether or chloroform placed on place of adhesion of tick to host body to cause relaxation of muscles of the insect's mouth, and then the samples were kept in ethyl alcohol solution 70% or 10% formalin solution for diagnosis by (Soulsby, 1982).

III. RESULTS AND DISCUSSION

Results of the present study showed that cows were infected with one type of tick, *Boophilus annulatus* (say, 1821).

This may be due to mismanagement and lack of attention to the hygiene of animals, sheds and lack of manpower, these are consistent with the findings of (Robson & Robb, 1967; Abdullah & Hassan, 1987) of ticks in sheep, cows, goats and buffaloes. Moderate temperatures may have increased the incidence of domestic animals, as confirmed by (Yousif & Aeschlimann, 1986) in their study in Algeria of 5,500 specimens from six genera and 12 species of tick insects that spread in certain months throughout the year.

Both (Zenebe, 2005; Shiferaw & Abebe, 2006) reported that cattle tick infestation increased in the wet weather of the year, ie in winter and early spring than in dry weather in summer and early autumn. The results are not consistent with a study conducted in Pakistan by researcher (Sajid *et al.*, 2008) on hard tick species in

ruminants, Five hosts were selected, including buffalo. 34.1% of animals were infected with two ticks.

Table 1: Percentage of monthly infestation of tick parasites in cows under study

Months	Total number tested	Positive number	%
October	24	8	33.33
November	8	3	37.5
December	12	2	16.66
January	9	—	0
February	16	2	12.5
March	22	6	27.27
Total	91	21	23.076

The diagnosis was based on phenotypic and standard characteristics, the *Boophilus annulatus* parasite appeared with a hexagonal head base, short parts of mouth and tentacles with dorsal and lateral edges. The respiratory aperture is circular or oval, and the male has barricades exterior side and subsequent lateral. The average length of the female is 6.38-7.21 (6.79) mm, and the average width is 3.35-4.07 (3.81) mm. The average length of males is 3.39-5.46 (4.38) mm, and the average width is 1.64-2.75 (2.23) mm.

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