



## EFFECT STUDY OF SEASON, AGE AND GENDER ON THE PREVALENCE OF TICKS IN CAMELS (*CAMELUS DROMEDARIUS*) IN MIDDLE AND SOUTHERN IRAQ

Hamed A.H. Aljabory<sup>1</sup>, Nooralhuda W. Abdulredha<sup>2</sup>, Ahmed Hamzah Mosa\*<sup>1</sup> and Hassanin H.N. Alautaish<sup>3</sup>

<sup>1</sup>Department of Internal and Preventive Veterinary Medicine, College of veterinary medicine, AL-Qasim Green University, Babylon, Iraq.

<sup>2</sup>Department of Biology, College of Education, University of Basrah, Iraq

<sup>3</sup> Department of Internal and Preventive Medicine, College of Veterinary Medicine, University of Basrah, Iraq  
Corresponding author: ahmedvet@vet.uoqasim.edu.iq

### Abstract

Tick plays a dangerous role in the loss of camels and other animals in terms of a transfer of pathogens or animal harmful such as thickening of the skin, inflammation, mastitis and the occurrence of abscesses, as well as anemia, wasting, general weakness and lack of appetite. Starting our study in March 2018 - February 2019, during the study period, 800 heads of camels were macroscopic examination in the Middle and Southern of Iraq. Results were highest prevalence was in the summer 99% and the lowest in the winter 20%. Age, infested were concentrated in ages  $\cdot$  8 years 65.2% while  $\cdot$  4 years 48%, that least infested. Sex, the highest percentage of females 60.2% while was recorded in males 46.6%. Clinical signs that significantly affected the infected animals are general weakness and less appetite with skin thickening and redness in the affected areas. In conclusion, we recommend putting in place a line to control the spread and control of ticks.

**Keyword:** Tick in Iraqi camels, epidemiological study, tick in summer, *Camelus dromedarius*.

### Introduction

Ticks are considered one of the pests that cause great harm to animals, especially camels, causing anxiety, confusion, anemia, and paralysis resulting from tick infection (Wall and Shearer, 2001). The effect of ticks on public health is significant because it is a vector of parasitic pathogens, bacteria and viruses, so it is a class of important infections in veterinary medicine (Mullen and Durden, 2009). The tick transmits some killer diseases to humans as well as to animals such as the Congo fever, which is caused by the Congo - Crimean Hemorrhagic Fever Virus (CCHFV) Where it caused great deaths in many countries, as well as in neighboring countries, like Iran, where it caused 89 deaths during the ten years of the year 2000. (Chinikar *et al.*, 2010).

Tick-borne pathogens cause a high economic decline in farm animals (Jongejan and Uilenberg, 2004). According to the FAO, Iraq has 78000 Arab camels Single hump lives in areas far from the city center (deserts) and has importance in transporting and transporting goods, meat, milk and lint, because of its distance from cities, there is less interest in it, so its susceptibility to external parasites is high A tick is one of those parasites on camels (Fard *et al.*, 2012). This study aimed to determine the severity of tick infested in camels, their prevalence and included age, gender and season in middle and southern Iraq.

### Materials and Methods

This study was conducted in March 2018 to February 2019 in the center and south of Iraq, during the study, 800 camels visual tests were randomized. Evenly distributed over seasons, ticks were collected from infected camels. To compare the results of tick infestation during the season, gender, and age, and clinical signs of heavy infested with ticks. we used the chi- square, The analysis we performed was used with statistical version SPSS 19. P <0.05 was significant.

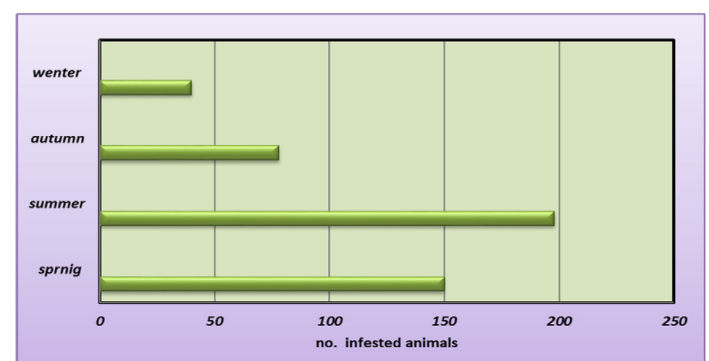
### Results

After examining 800 camels, it was found that 466 camels were infested with ticks during the year in which we collected the samples, where it was throughout the year, but the infested was concentrated in the spring and summer, in the summer the highest rate of infested was recorded. During the study, there were higher infested in ages  $\cdot$  8 years From the sex highest percentage of females 60.2% while was recorded in males 46.6% .

**Table 1:** Seasonal prevalence of tick infestation in one-humped camels ( $n=800$ )

Season	No. of tested animal	No. of infested animals	Percentage %
Sprig	200	150	75
Summer	200	198	99
Autumn	200	78	39
Winter	200	40	20
Total	800	466	58.2

Significant differences between seasonal ( $p<0.01$ ).



**Histogram 1.** Shows the number of infested animals during the season

The results showed that the infection rate according to the season was the highest in the summer, where it recorded 99%, the second was the spring, where it recorded 75%, the

fall recorded 39% and finally the winter was at 20%. Table 1 histogram 1.

**Table 2 :** Tick infested by age of camels

Age	No. of tested animal	No. of infested animals	% Percentage
< 4 year	300	145	48
≥ 4 - < 8 year	270	170	62.9
≥ 8 - < 12 year	230	150	65.2
Total	800	466	58.2

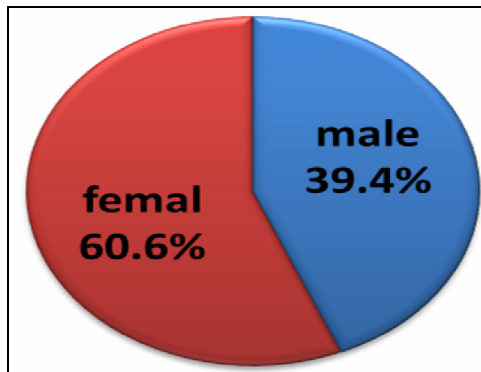
**Significant differences between ages (p<0.01)**

Our results showed that the age is < 4 years, the infested rate was 145/300, (48%), while the oldest age was ≥ 4 years and 8 years, 170/270 was (62.9%). The oldest age was ≥ 8 years and <12 years. 150/230, 65.2 % .table 2.

**Table 3 :** The number of tick infested shown by the gender.

Gander	No. of tested animal	No. of infested	%
Male	120	56	39.4
Female	680	410	60.6
Total	800	466	58.2

Significant differences between females and males (p<0.01)



**Histogram 2.** Tick infested according to gender

The results showed that the camel had a tick infection by gender, that the females were the most affected, and 410/680 had an average of 60.2%. While the males were 56 \ 120 at a rate of 46.6%. Table 3.

Clinical signs of animals with major infested are general weakness, thickening of the skin at the site of the old infested redness of the skin at the site of new infections, fall of lint and less growth with yellowing of the eye ball.

**Discussion**

Camels graze and live in desert, semi-desert, and wild areas and often have few veterinary services and health care (Fassi-Fehri, 1987).

Tick infection is considered a serious lesion in camels, due to the fact that it causes several diseases such as anemia, harmful to the udder, in addition to being a vector of diseases (Tekka *et al.*, 2017; Al Salihi *et al.*, 2017; Walker *et al.*, 2003; Higgins, 1983) One of the losses for camels due to ticks is productivity (Zelege and Bekele, 2004)

(Hussein and Al-Fatlawi, 2009; Muhammad, 2015; Shober, 2014: Shober and others, 2014). They recorded in reports presented different levels of tick infection in camels, in our study that included in middle and southern Iraq, we recorded different levels of tick infection as well.

In the current study, the results showed the highest infection rate was in the summer 99% (198\200) while the lowest rate in the winter 20% (40\200). Table 1, histogram 1, which corresponds to reports rate of (Moshaverinia, & Moghaddas, 2015) 100% (100\100) in summer, 20% (20\100), and also (Fard *et al.*, 2012) 44.8 % (191 \ 426), in summer 8.2% (35\ 426), in winter, (Zelege, & Bekele. 2004). It does not match our results, as it showed that winter infested are the most.

Our results showed that ages ≥ 4 years and < 12 years 62.9%, 65.2%, are more susceptible to ticks, compared to ages < 4years, 48% , this agreement with (Hussein and Al-Fatlawi, 2009). Our results are disagree with (Megersa *et al.*, 2012), who indicate that infections are higher in 1-3 years than in older animals.

Animals > 4 years are sexually mature for this and due to hormonal changes in pregnancy and calving and lactation is prone to stress(Hussein and Al-Fatlawi, 2009), which is one of the causes of infestation, as well as animals with large ages are slower in movement, which makes it easier to catch in ticks unlike young animals.

The results showed, according to gender, that females are more infected than males, 60.2% and 46.6%, respectively, and this corresponds to the results reported by (Hussein and Al-Fatlawi, 2009), The reason is attributed to the exposure of females to hormonal changes, pregnancy and lactation, and this leads to stress on them and ease of infection.

As for males, the low incidence of infection is due to the lack of presence in the herds, because her mother is mostly sent for slaughter except for young people, who are less infected, as presented.

**Conclusion**

In conclusion, the presence of large tick injuries among camel herds in central and southern Iraq, which are a serious factor causing high economic losses as well as a carrier of other causes. The veterinarian authorities' attention to conducting remedial campaigns according to a timetable for that and directing the breeder towards it.

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