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## **Ixodid Tick Species Infesting Sheep and Cattle in Kelardasht Part (Chaloos), Iran**

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**Abstract:** Ticks are features which are apart of metastigmata order. All of these features are parasite of animals which only feed on them. Ticks and disease related, causes economical damages which in some case these damages reaches to million dollars each year. Because of the importance of recognition ticks, particularly Ixodidae, this research has been done on Ixodidae ticks on domestic animals at Kelardasht in Mazandaran Northern Iran. The used method in this research it was cross-section and this ticks were studied on, were collected during 5 month (May to September 2004) from 150 sheep and cattle. From 980 collected samples, 798 numbers of them departed in genus and species and the rest were eliminated. In this study 6 groups species. In *Ixodes* the only observed species was *ricinus*, in *Boophilus* only *anulatus* species, in *Dermacentor* only *marginatus* was identified. But in *Haemaphysalis* two different species were observed *punctata* and *inermis*. In *Hyalomma* and *Rhipicephalus bursa* was observed. In these study samples the most percentages was seen in *Ixodes* (26.8 %) and the minimum was in *Haemaphysalis* (0.2%).

**Key words:** Ticks, ixodidae, Mazandaran, Iran

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### **INTRODUCTION**

Ticks are features which are apart of metastigmata order. All of these features are parasite of animals which only feed on them. Ticks divided in two main family, hard ticks (*Ixodidae*) and soft ticks (*Argasidae*). They are extently 650 spices of ticks exists which distributes in 11 genus such as *Hyalomma*, *Rhipicephalus*, *Ixodes*. (Mike and Service, 2001). This feature also likes to feed from domestic animals, wild mammals, also settled human as the main host. Being in the vicinity of these features is the main reason in transmitting variety of infection to human, such as Crimean-Congo Hemorrhagic Fever (CCHF).

The important point about such as disease that only impeticular infection transmit only by one genus of tick, therefore recognize the variety of different genus and spice are very important in studying epidemiology variety of disease (Millan and Gortazar, 2004).

Ticks and disease related, causes economical damages which in some case these damages reaches to million dollars each year (Calvete and Estrada, 2003). In Australia these damages estimated mostly 22 million dollars in year (Schmidt Man and Schlater, 1998). Because of the importance of recognition ticks, particularly Ixodidae, this research has been done on Ixodidae ticks on domestic animals at Kelardasht in Mazandaran Northern Iran.

### **MATERIALS AND METHODS**

The used method in this research it was cross-section and this ticks were studied on, were collected during 5 month (May to September) from 150 sheep and cattle. These ticks were collected

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Table 1: Separation and Identification of genus and species hard ticks in Kelardasht (Chaloos) area

Genus	Species	Male (%)	Female (%)	Total (%)
<i>Ixodes</i>	<i>ricinus</i>	48 (36.08)	246 (40.06)	294 (26.8)
<i>Boophilus</i>	<i>annulatus</i>	16 (8.70)	148 (24.10)	164 (20.5)
<i>Dermacentor</i>	<i>Marginatus</i>	4 (2.18)	3 (0.49)	7 (0.8)
<i>Haemaphysalis</i>	<i>punctata</i>	19 (10.32)	114 (18.57)	133 (16.6)
<i>Haemaphysalis</i>	<i>inermis</i>	-	2 (0.32)	2 (0.2)
<i>Hyalomma</i>	<i>anatolicum</i>	14 (7.61)	6 (0.98)	20 (2.5)
<i>Rhipicephalus</i>	<i>bursa</i>	83 (45.11)	95 (15.47)	178 (22.3)
Total		184 (23.05)	614 (76.95)	798 (100.0)

in North-East of Calloos at Lahoo jungle, Oosman sere at Kelardasht of course was awarded to the animal husbandman not to use any insecticide or chemical materials arthropods.

Ticks were tightened and stuck to host's body by their hypostome and when they were aperted, some part of their mouth part was remained. After taking off ticks from the body of animals, they were collected in vessels containing ethyl alcohol 70% and were translated to parasitology laboratory in Babol University. In the laboratory ticks that the mouth parts were taken off were eliminated. Then using the key to identify the kind of tick by what kind of mouthpart and etc they have, variety of genus and species were separated.

## RESULTS

From 980 collected samples, 798 numbers of them departed in genus and species and the rest were eliminated. In this study 6 groups' species were as follow: The study included six identified genus groups; *Ixodes*, *Boophilus*, *Dermacentor*, *Haemaphysalis*, *Hyalomma* and *Rhipicephalus*.

In *Ixodes* the only observed species was *ricinus*, in *Boophilus* only *annulatus* species, in *Dermacentor* only *marginatus* was identified. But in *Haemaphysalis* two different species were observed *punctata* and *inermis*. In *Hyalomma* and *Rhipicephalus bursa* was observed (Table 1). In these study samples the most percentages was seen in *Ixodes ricinus* (26.8 %) and the minimum was in *Haemaphysalis inermis* (0.2%).

## DISCUSSION

Hard ticks transmit diseases mainly to animals and rarely or accidentally to human. This research was studied on ticks in Kelardasht (Chaloos). There have been different studies about this issue in other parts of world. For example the first research was done in by Lingerin and et al in Auwa, US during 12 years (Lingerin and Rowley, 2005). The number of samples reached to 5343 which were collected from 99 units in America. The separated genres were *Dermacentor variabilis*, *Amblioma americanum* and *Ixodes scopolariopsis*.

The second study was reported in Thailand, on domestic animals and the total of 1491 of ticks were collected, the most common ticks were *Rhipicephalus* and *Boophilus* (Nithikathkul and Poleseela, 2002).

The third research was studied about hard tick, in different genus were separated and identification such as *Boophilus* (Kumar and Balakrishanan, 2002).

Also in Europe (Greece) the research have been done by Papadopoulos, during 3 years on 11620 samples of ticks on animals such as cattle, dogs, showed that the major ticks on these animals is *Rhipicephalus* (Papadopoulos, 1996). These results were the same as the results we have observed in Kelardasht.

In the research have been done by Abdi-Godarzi and Hashani Fesharaki (2005) Razi Institute during two years in Isfahan, East Azarbayjan, Khozestan, Kordestan, Lorestan and Mazandaran. The numbers of 13 species of ticks were identification, which was expected to collect more species.

In the other researches which have been done in Savojbolagh, on 740 numbers of sheep and goat showed that the major numbers of ticks were *Ripicephalus* and *Hyalomma* (Esmail Nia and Ahari Pour, 2005). Also these was another research done in Kerman, wich showed that the major kind of ticks are *Hyalomma* (Radfar, 2005). But in this investigation prevailing species observed was *Ixodes*; this difference might be, because of the kind of weather.

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