

Identification of *Ixodidae* Ticks of Domestic Ruminants in Boushehr, Iran

Zarif-fard, M.R.,* Abdi-Goudarzi, M.

Razi Vaccine & Serum Research Institute, P.O.Box 11365-1558, Tehran, Iran

Received 3 Nov1999; accepted 30 May 2000

Summary

The prevalence of male *Ixodidae* ticks was studied in Boushehr province. Specimens were randomly collected from domestic ruminants in different villages during four seasons from 1997-1998. Ticks species were identified by means of direct examination using morphological features. Totally 1841 specimens were collected. The collection included *Hyalomma anatolicum anatolicum* Kock, 1844 (45.22%), *Rhipiciphalus sanguineus* (Latreille, 1806) (38.012%), *Hyalomma detritum* Senevet, 1922 (8.99%) and *Hyalomma dromedarii* Koch, 1844 (5.36%). Moreover, one female *Boophilus annalatus* Say, 1821 and one male *Haemaphysalis sulcata* were identified.

Key words: tick, *Ixodidae*, Iran

Introduction

In spite of any information about tick diagnosis in Iran (Delpy 1938, Abassian 1961, Filipova 1976, Hoogstral 1980) there is not complete local and specific understanding on different aspects of ticks. Because of some geographical specifications and probable presence of different types of ticks, Boushehr province has been selected in this study. Boushehr is located between 27,14 to 30,16 northern latitude and 50,6 to 52,58 eastern longitude. According to temperature, relative humidity and wind blowing the province can be divided to three climatic zones: 1) coastal or Balouchi, 2) hot semi-steppe (plain) and 3) mountainous zone. Boushehr with 25359 square kilometers is along to Persian Gulf seaside with hot desert and high relative humidity

climate. Near the seaside it is wet and far from the seaside it is dry. Maximum and minimum temperature in summer and winter are 50 and 1°C, respectively. Relative humidity changes between 12 to 95% in different places during the year.

Materials and Methods

Sampling. Five villages were selected in each climatic zone and ticks were collected from host bodies during four seasons. Ticks were characterized according to their morphological specifications, comparison to the standard identified specimens and using diagnostic keys (Delpy 1949, Hoogstral *et al* 1959). *Ixodidae* male tick could be diagnosed more easily than the female, so, here identification of species was focused on male tick.

Statistical analysis. *t* student test was applied on *H.anatolicum anatolicum* data at the first time and then on different seasons of the tested regions.

Results and Discussion

The frequency of 1841 infesting livestock in Boushehr area according to their sex is shown in table 1. Of those, 1267 male, 541 female and 33 nymphs have been identified.

Table 1. *The frequency of ticks collected from different hosts in Boushehr*

Species	Male	Female	Total	Percent
<i>H. anatolicum anatolicum</i>	573	-	573	31.12
<i>H. dertium</i>	114	-	114	6.19
<i>H. dromedarii</i>	68	-	68	3.69
<i>Hyalomma spp.</i>	28	202	230	12.50
<i>Rhipicephalus sanguinus</i>	483	338	821	44.60
<i>Boophilus annulatus</i>	-	1	1	0.05
<i>Haemaphysalis sulcata</i>	1	-	1	0.05
Nymphs	-	-	33	1.80
Total	1267	541	1841	100

Table 2 shows summarized results of male *Hyalomma* and *Rhipicephalus* spp. distributions in different seasons. The frequency of male *H.anatolicum anatolicum* is shown in table 3.

Table 2. Distribution of *Hyalomma* spp. and *Rhipicephalus* in different seasons

Species Season	<i>H.anatolicum</i> <i>Anatolicum</i>	<i>H.</i> <i>Detrium</i>	<i>H.</i> <i>deromedarii</i>	<i>Hyalomma</i> spp.	<i>Rh</i> <i>sanguineus.</i>	Total
Summer	68	23	11	16	162	280
Fall	108	18	-	-	46	172
Winter	261	29	16	12	254	572
Spring	136	44	41	-	21	242

Table 3. The frequency of male *H. anatolicum anatolicum* according to different seasons and climatic zones

Species Season	Mountainous	Plain	Costal	Total
Summer	32	25	15	72
Fall	51	40	17	108
Winter	110	85	62	257
Spring	64	45	27	136
Total	257	195	121	573

Based on our study male *H.anatolicum anatolicum* is the prevalent tick in Boushehr area. The significant differences were observed between costal and plain ($p<0.05$), mountainous and costal regions ($p<0.01$). The analysis of data for prevalence of *H.anatolicum anatolicum* (table 2) showing that the significant differences were observed between spring and summer, and spring and winter but it is not observed between spring and fall.

It is to be noted that, *Boophilus* and *Haemaphysalis* are rare in this part of Iran. However this finding should be assumed as the reason of host migration from other parts of the country. From total number of 1841 collected ticks 821 (44.59%) are

Rh.sanguineus. The result is similar to Mazlum (1971) study, which also reported that distribution of the tick is limited to the southern parts of Iran.

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