



Geographical distribution of ixodidae (hard ticks) in all provinces of Iraq

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Abstract

A Large project was held to detect the hard ticks in Iraq in 2019; 3421 ticks' samples were collected from 18 provinces of Iraq, representing all Iraqi areas. The results showed that ticks belonging to the Ixodidae family, the prevalence and density of ticks per host revealed that the genus *Hyalomma* was the dominant genus in the present survey. Genus *Hyalomma* spp. The highest rate in Duhok was 88.6%, while the lowest rate was 46.94% in Nineveh. Eight species belonging to *Hyalomma* are *Hyalomma anatolicum*, *Hyalomma turanicum*, *Hyalomma scupense*, *Hyalomma dromedarii*, *Hyalomma excavatum*, while *Rhipicephalus* spp. was the second most common species namely *Rhipicephalus annulatus*, *Rhipicephalus sanguineus*, *Rhipicephalus turanicus*, the highest rate found in Al-Anbar 48.9% while the lowest in Duhok was 11.4%. The genus *Dermacentor* spp. found in Basra only at a rate of 1.72%.

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Introduction

Ticks are generally regarded as the Ectoparasite that causes significant economic losses to livestock production worldwide; they cause anemia, damage hides, and paralysis (1). However, hard ticks play a considerable role in spreading various infectious diseases of human and animal importance (2-4). Ticks are distributed in many countries except the frozen areas (5), and they infest broad groups of mammals (6). Also, ticks have huge ability adaptations for host and environmental tolerance (7,8). There have been attempts at immunization, like the one made by using the salivary gland of *Hyalomma* to immunize sheep (9). Ticks of Iraq were well documented (10-14), reported on the seasonal incidence and distribution of ticks infesting domestic animals; basic information was added to four unreported ticks on the list of 21 species (15,16). Another study reported some spp of ticks on domestic and wild animals in Iraq, and ticks in the desert of Iraq (17). A survey was performed to identify the species of ticks at their geographical distribution in fifteen provinces of Iraq (18). Other study the distribution of ticks and infection among sheep and cattle in the southern part of

Baghdad (19). In contrast, in Sulaimani, an epidemiological study of hard ticks showed that *Hyalomma anatolicum anatolicum*, *H. marginatum*, *Rhipicephalus turanicus*, and *R. sanguineus* are more prevalent in sheep (20,21). There are about 700 species of Ixodidae ticks described worldwide (22). In comparison, there were 33 species and subspecies of hard ticks in Iraq (18,23). More recently, studies provided perfect data on tick infestations among native animals in different areas of Iraq (24,25). Recent studies in Al-Najaf province showed three abundant species private: *Boophilus annulatus*, *Rhipicephalus sanguineus*, and *Hyalomma dromedarii* (26-28).

This survey is a huge campaign held in Iraq since 1967, which covers 18 provinces, to identify hard ticks with particular emphasis on the claim of some researchers that new species of Bovine.

Materials and methods

Animal and tick sample

The samples collected from domestic animal (cattle, sheep, goat, buffalo, dog, and chickens) was carefully

examined to detect hard ticks and then removed and placed in methyl alcohol 70% for preservation.

Study areas

The samples carried out from 18 provinces included: Nineveh 48, Saladin 155, Babylon 115, Wasit 149, Diyala 86, Sulaymaniyah 787, Basra 233, Najaf 105, Muthanna 236, Al-Anbar 182, Al-Qadisiya 86, Kirkuk 73, Baghdad 230, Karbala 213, Maysan 193, Thi-Qar 426, Erbil 60, and Duhok 39.

Microscopic examination of hard tick

A dissecting microscope is used to examine tick samples after cleaning them to identify the species of the ticks with the aid of diagnostic keys and taxonomy depending on references (15-29).

Ethical approve

The Scientific Ethical Committee of the College of Veterinary Medicine, University of Diyala, Iraq, approved this study Approval no: VM 104 December 2018 H, R, M, E, S and T.

Statistical analysis

The data were analyzed using IBM-SPSS Version 19 (Inc., Chicago, USA), which included the Chi-square 2x2 table and the Kappa value. The data was deemed statistically significant when the P value was 0.05 and 0.01.

Results

This survey aims to search for A claim that ticks *Amblyomma gemma* Were reported previously in a massive project to apply integrated pest management (IPA) to hard ticks in Iraq during 2015 in 12 provinces; a total number of 3421 ticks' samples were collected from 18 provinces of Iraq including Kurdistan region during the year 2019. The results identified ticks belonging to the family Ixodidae, and the prevalence and density of ticks per host recorded that the genus *Hyalomma* was more dominant in the present survey (Table 1).

Table 1: Distribution of Ixodidae ticks among Iraq provinces

Province	<i>Hyalomma</i> spp.%	<i>Rhipicphalus</i> spp.%	<i>Dermacentor</i> %	P value
Nineveh	46.94	51.0	0	0.031
Saladin	51.61	48.38	0	0.028
Babylon	51.3	48.7	0	0.035
Wasit	58.38	41.6	0	0.026
Diyala	60.47	39.53	0	0.038
Sulaymaniyah	67.73	32.27	0	0.035
Basra	78.11	20.17	1.72	0.022
Najaf	73.33	26.7	0	0.026
Muthanna	62.29	37.7	0	0.029
Al Anbar	51.1	48.9	0	0.034
Al-Qadisiyyah	74.42	25.58	0	0.027
Kirkuk	69.86	30.1	0	0.039
Baghdad	83.47	16.52	0	0.011
Karbala	70.42	29.6	0	0.032
Maysan	83.9	16.1	0	0.014
DhiQar	75.85	24.2	0	0.027
Erbil	78.3	21.66	0	0.026
Duhok	88.6	11.4	0	0.015

Genus *Hyalomma* spp. (Figure 1A) recorded the highest rate in Duhok 88.6% while the lowest rate, 46.94%, in Nineveh, *Rhipicephalus* spp. (Figure 1B), was the second most common species, the highest rate found in Al Anbar 48.9% while the lowest in Duhok was 11.4%. The genus *Dermacentor* (Figure 1C) was found in Basra only at a rate of 1.72% (Table 1).

The results of the present survey will be summarized in table 2. Eight species belonging to two Genera *Hyalomma* and *Rhipicephalus*, namely, *H. anatolicum* (Figure 1A), *H. turanicum* (Figure 2A), *H. scupense* (Figure 2B), *H.*

dromedaryi, *H. excavatum* (Figure 2C), *R. annulatus* (Figure 3A), *R. sanguineus* (Figure 3B).

Hyalomma anatolicum was outperformed the rest of the tick species in this study, with the highest rate of 87.18%, found in Duhok, and the lowest rate in Najaf, 25.97%. The least prevalent species was *Hyalomma excavatum* in Iraq districts, with a rate of 37.63%. The second hard tick distribution in Iraq is *Rhipicephalus*, which recorded three species. The total infestation rate was *R. turanicus* 67%, *R. annulatus* 17.1%, *R. sanguineus* 15.9% (Table 2).



Figure 1: A. *Hyalomma anatolicum*, B. *Rhipicephalus turanicus*, C. *Dermacenter* spp.

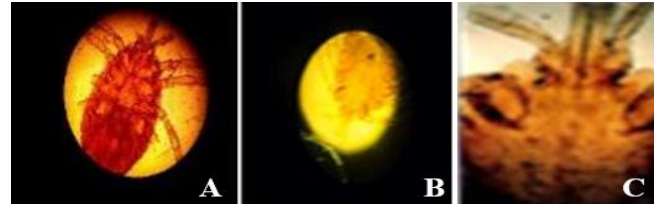


Figure 2: A. *Hyalomma turanicum*, B. *Hyalomma scupense*, C. *Hyalomma excavatum*.

Table 2: Distribution of Genus *Hyalomma*, *Rhipicephalus* and *Dermocenter* among Iraq provinces

Province	<i>H. anatolicum</i>	<i>H. turanicum</i>	<i>H. scupense</i>	<i>H. dromedari</i>	<i>H. excavatum</i>	Total
Nineveh	13	1	9	0	0	23
Saladin	58	13	9	0	0	80
Babylon	25	20	14	0	0	59
Wasit	40	30	17	0	0	87
Diyala	22	15	15	0	0	52
Sulaymaniyah	373	106	54	0	0	533
Basra	76	35	14	57	0	182
Najaf	20	7	50	0	0	77
Muthanna	87	28	32	0	0	147
Al Anbar	30	26	0	2	35	93
Al-Qadisiyah	50	10	4	0	0	64
Kirkuk	29	0	22	0	0	51
Baghdad	154	13	25	0	0	192
Karbala	87	2	61	0	0	150
Maysan	131		31	0	0	162
DhiQar	220	5	98	0	0	323
Erbil	34	10	3	0	0	47
Duhok	34	3	2	0	0	39
Total	1483	324	460	59	35	2361

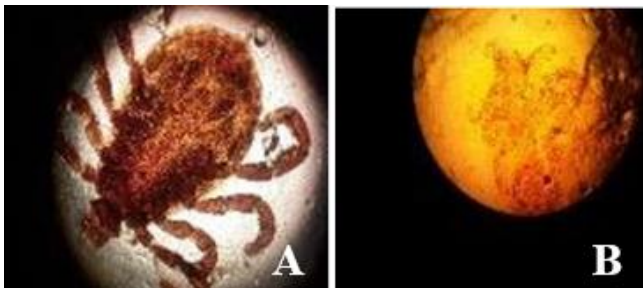


Figure 3: A. *Rhipicephalus sanguineus*, B. *Rhipicephalus annulatus*.

Discussion

This study showed that the infestation of ticks in livestock in Iraq is still a problem even after using different insecticides from the sixteenth of the 20th century. The importation of live livestock to Iraq from other countries, especially the illegal ones, increases the rate of introducing Ectoparasites that may not be detected during the

examination. The present work differs from the most recent work on ticks in Iraq, like a study of Shubber *et al.* (30) which covered 12 provinces, while our research includes 15 provinces plus three provinces of the Kurdistan region. Still, the genus *Hyalomma* was the most dominant species among ticks-infested livestock in Iraq, which agrees with most studies and surveys implemented before (31-35), while the second most abundant ticks' species in Iraq was genus *Rhipicephalus* with its three species were *R. turanicus* 67%, *R. annulatus* 17.1%, *R. sanguineus* 15.9%, various factors affect the increasing of *Rhipicephalus* spp intensity, these factors may be improvement in raising conditions, age of the animals, breed, immunity, acaricides usage and the seasonal changes e.g. sharp decrease in annual rainfall during recent seasons recorded in Iraq (36,38).

Basra recorded a single infection rate of 1.72% in only one province with *Dermacenter* hard tick. These results differ from earlier work which could be due to alteration of the relative humidity (9,37,40), which is considered to be a limiting factor of the geographical distribution of various ticks' species, and this may be due to environmental changes

affecting the prevalence of tick's infestation like temperature, rainfall, and relative humidity which play essential roles in propagation and multiplication of ticks (19,42).

Conclusion

The results showed the highest Ixodidae hard tick infestation rate, which is still widely spread in Iraq. Genus *Hyalomma* was dominant in the present survey. While *Rhipicephalus* spp. was the second most common species and, for the first time, the genus *Dermacentor* spp. Recorded in Basra province, the results appeared in this survey.

Acknowledgments

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Conflict of interest

All authors declare that there is no conflict of interest.

References

1. Snelson JT. Animal ectoparasites and disease vectors causing major reductions in world food supplies. *FAO Plant Prot. Bull.*, 13: 103–114.
2. Tuama SJ. Ticks infesting some domestic animals in Thi-Qar province, southern Iraq. *J Missan Res.* 2007;4(7):1-12.
3. Ali MJ, Atiyah WR, Al-Fatlawi MA., Klaif SF. Genotypic analysis of ticks species infesting cattle in Al-Diwaniyah abattoir. *Iraqi J Vet Sci.* 2021;35(4):673-677. DOI: [10.33899/ijvs.2020.127772.1525](https://doi.org/10.33899/ijvs.2020.127772.1525)
4. Hamid MM, Al-Obaidi Q. Prevalence of ovine theileriosis in Mosul city, Iraq. *Iraqi J Vet Sci.* 2023;37(1):205-211. DOI: [10.33899/ijvs.2022.134478.2370](https://doi.org/10.33899/ijvs.2022.134478.2370)
5. Perveen N, Muzaffar SB, Al-Deeb ML. Prevalence, distribution, and molecular record of four hard ticks from livestock in the United Arab Emirates. *Insects.* 2021;12(11):1016. DOI: [10.3390/insects12111016](https://doi.org/10.3390/insects12111016)
6. Abdalrahman BM, Mustafa B. Effect of tick and lice on some blood parameters of local black goat in Sulaimani, Kurdistan region of Iraq. *Kurdistan J Appl Res.*2018;3(2):38-42. DOI: [10.24017/science.2018.3.7](https://doi.org/10.24017/science.2018.3.7)
7. Abdigoudarzi M, Esmailnia K, Shariat N. Laboratory study on biological control of ticks (Acari: Ixodidae) by entomopathogenic indigenous fungi (*Beauveria bassiana*). *Iran J Arthropod-borne Dis.* 2009;3(2):36-43. [\[available at\]](#)
8. Wall RL, Shearer D. *Veterinary ectoparasites: Biology, pathology and control.* 2nd ed. UK: Blackwell Science Ltd.; 2008. 260 p.
9. Robson J, Robb JM. Ticks (Ixodoidea) of domestic animals in Iraq, spring and early summer infestation in the Liwas of Baghdad, Kut, Amara and Basra. *J Med Entomol.* 1967;4(3):289-293. DOI: [10.1093/jmedent/4.3.289](https://doi.org/10.1093/jmedent/4.3.289)
10. AL-Hyali L. Comparative immunizing status between repeated experimental infestation and injection of salivary gland extract of *Hyalomma anatolicum anatolicum* in sheep [Ph.D. dissertation]. Iraq: University of Mosul, College of Veterinary Medicine; 2007.140 p.
11. Robson J, Robb JM, Hawa NJ. Ticks (Ixodoidea) of Kut, Amara, and Basra and winter and summer infestation in the Liwa of Baghdad. *J Med Entomol.* 1968a;5(2):257-261. DOI: [10.1093/jmedent/5.2.257](https://doi.org/10.1093/jmedent/5.2.257)
12. Robson J, Robb JM, Hawa NJ. Ticks (Ixodoidea) of domestic animals in Iraq. Part 4. A comparison in the Liwa of Mosul. *J Med Entomol.* 1968b;5(2):261-264. DOI: [10.1093/jmedent/5.2.261](https://doi.org/10.1093/jmedent/5.2.261)
13. Robson J, Robb JM, Hawa NJ. Ticks (Ixodoidea) of domestic animals in Iraq. Part 5. Infestation in the Liwa of Diwaniya and Nasiriya (spring), Karbala (winter), and Hilla (autumn and winter). *J Med Entomol.* 1969a;6(2):120-124. DOI: [10.1093/jmedent/6.2.120](https://doi.org/10.1093/jmedent/6.2.120)
14. Robson J, Robb JM, Hawa NJ, AL- Wahayyi T. Ticks (Ixodoidea) of domestic animal in Iraq. Part 6. Distribution. *J Med Entomol.* 1969b;6(2):125-127. DOI: [10.1093/jmedent/6.2.125](https://doi.org/10.1093/jmedent/6.2.125)
15. Hoogstraal H, Kaiser MN. The ticks (Ixodoidea) of Iraq: Keys, hosts, and distribution. *J Iraqi Med Prof.* 1958;6(2):3. [\[available at\]](#)
16. Leiper JG. Animal parasites and their control. Report to the government of Iraq. Rome: FAO. 1957; 610 p.
17. Abdul-Rassoul MS, Mohammad MK. Ticks (Ixodoidea, Acarina) of desert in Iraq. *Bull Iraq Nat Hist Mus.* 1988;8(1):11-24. DOI: [10.26842/inhmp.7.2020.05.37.0016](https://doi.org/10.26842/inhmp.7.2020.05.37.0016)
18. Mohammad MK. A bio-taxonomic study on the hard ticks (Acari: Ixodidae) of some domestic and wild animal from Iraq [Ph.D. dissertation]. Iraq: University of Baghdad, College of Sciences; 1996. 202 p.
19. Hasson RH, Al-Zubaidi HH. Sheep and goats tick's infestation in Wasit's districts. *Iraqi J Vet Sci.* 2012;36:299-305. DOI: [10.30539/iraqijvm.v36i0e.429](https://doi.org/10.30539/iraqijvm.v36i0e.429)
20. Kadir MA, Zangana IK, Mustafa BS. A study on epidemiology of hard tick (Ixodidae) in sheep in Sulaimani governorate - Iraq. *Iraqi J Vet Sci.* 2012;26(3):95-103. DOI: [10.33899/ijvs.2012.168745](https://doi.org/10.33899/ijvs.2012.168745)
21. Shanan SM, Abbas SF, Mohammad MK. Ixodid ticks diversity and seasonal dynamic on cattle in north, middle and south of Iraq. *Syst Appl Acarol.* 2017;22(10):1651-1658. DOI: [10.11158/saa.22.10.7](https://doi.org/10.11158/saa.22.10.7)
22. Guglielmone AA, Petney TM. *The hard ticks of the world (Acari: Ixodida: Ixodidae).* USA: Springer; 2014. 738 p.
23. Al-Azawi B, Al-obeidy T. Tick (Acarina) from domestic animals in central Iraq. *Iraqi J Vet Med.* 1992;16:22-26. DOI: [10.30539/ijvm.v23i1.1188](https://doi.org/10.30539/ijvm.v23i1.1188)
24. Shubber HK, Al-Hassani NA, Mohammad MK. Ixodid ticks diversity in middle and south of Iraq. *Int J Recent Sci Res.* 2014;5(9):1518-1523. [\[available at\]](#)
25. Shubber, H.W.K. (2014) Taxonomic, Anatomic and Molecular study of Ixodid ticks parasitizing some mammals and birds in the middle and south of Iraq. Ph. D. thesis, college of Education, University of Qadysia..
26. Al-Husseini MT. Morphological study of the cattle ticks (Acari: Ixodidae) infesting on sheep in Al Najaf province-Iraq. *IOP Conf Ser: Mater Sci Eng.* 2019;571:012061. DOI: [10.1088/1757-899X/571/1/012061](https://doi.org/10.1088/1757-899X/571/1/012061)
27. Al-Husseini MT. Molecular identification of three species of hard ticks (Acari: Ixodidae) collected on Al-Najaf province, Iraq. *Ann Roman Soc Cell Biol.* 2021;25(4):1583-6258. [\[available at\]](#)
28. Fatlawi MA, Ali M J, Albayati HH. Morphological and phylogenetic study of *Hyalomma anatolicum* in Al-Najaf-Iraq. *Iraqi J Vet Sci.* 2018;32(2):261-266. DOI: [10.33899/ijvs.2019.153860](https://doi.org/10.33899/ijvs.2019.153860)
29. Soulsby EL. *Helminths, arthropods and protozoa in domesticated animals.* 7th ed. UK: Bailliere Tindall and cassell; 1982. 809 p.
30. Hasson, R.H. (2012) Tick distribution and infestation among sheep and cattle in Baghdad's south suburb. *Kufa Journal For Veterinary Medical Sciences,* 3(1), 77–90.Hasson RH, Al-Zubaidi HH. Ectoparasites of rodents from some districts in Baghdad. *Wasit J Sci Med.* 2011;4(2):19-28. DOI: [10.30539/iraqijvm.v36i0e.429](https://doi.org/10.30539/iraqijvm.v36i0e.429)
31. Hasson RH. Tick distribution and infestation among sheep and cattle in Baghdad's south suburb. *Kufa J Vet Med Sci.* 2012;3(1):77-90. DOI: [10.36326/kjvs/2012/v3i14080](https://doi.org/10.36326/kjvs/2012/v3i14080)
32. Ismael S, Omer TO. Molecular identification of new circulating *Hyalomma asiaticum asiaticum* from sheep and goats in Duhok governorate, Iraq. *Iraqi J Vet Sci.* 2021;35(1):79- 83). DOI: [10.33899/ijvs.2020.126330.1298](https://doi.org/10.33899/ijvs.2020.126330.1298)

33. Hasson RH, Al-Zubaidi HH. Cattle and buffaloes tick's infestation in Waist province districts, Iraq. Kufa J Vet Med Sci. 2014;5(1):31-40. DOI: [10.36326/kjvs/2012/v3i14080](https://doi.org/10.36326/kjvs/2012/v3i14080)
34. Ismael S, Omer TO. Morphological and molecular study of hard ticks species that infested small ruminants in Duhok governorate, Kurdistan region, Iraq. Basrah J Vet Res. 2020;19(1):88-108. DOI: [10.23975/bjvetr.2020.170615](https://doi.org/10.23975/bjvetr.2020.170615)
35. Aziz KJ, AL-Barwary LO. The prevalence rate of ixodid ticks in equids and some nearby farm animals in Erbil governorate, north of Iraq. Basrah J Vet Res. 2019;18(1):337-359. DOI: [10.17582/journal.aavs/2020/8.12.1286.1293](https://doi.org/10.17582/journal.aavs/2020/8.12.1286.1293)
36. Hawa NJ, Jasim FA, Abdul Aziz MO. A survey for the species of tick and its geographical distribution in Iraq to specify the species for transmission of Haemorrhagic fever. Iraqi J Agric Sci. 2000;5(4):87-97. DOI: [10.36103/ijas.v50i6.851](https://doi.org/10.36103/ijas.v50i6.851)
37. Hoogstraal H. African Ixodoidea. Ticks of Sudan. (with special reference to Equatoria province and preliminary reviews of the genera: Boophilus, Margaropus and Hyalomma. USA: U.S. Department of Navy; 1956. 1101 p.
38. Mustafa BS. Pathogenicity of Boophilus species hard tick among engorged female in naturally infested cattle with ixodidae piroplasmiasis in Sulaimani province-Kurdistan region/ Iraq. J Tikrit Univ Agri Sci. 2017;17:77-85. [\[available at\]](#)
39. Shamsuddin M, Mohammad MK. Incidence, distribution, and host relationships of some ticks (Ixodoidea) in Iraq. J Univ Kuwait Sci. 1988;15(2):321-330. [\[available at\]](#)
40. Abdullah SH, Dyary HO. Molecular characterization and phylogenetic analysis of *Anaplasma spp.* in small ruminants from Sulaymaniyah governorate, Iraq. Iraqi J Vet Sci. 2022;36(1):15-20. DOI: [10.33899/ijvs.2021.128475.1581](https://doi.org/10.33899/ijvs.2021.128475.1581)
41. Hatem AN. prevalence and ecology of the brown dog tick *Rhipicephalus sanguineus* in domestic mammals in Basrah province, Iraq, with the acaricidal effect of *Quercus brantii* acorns extract in adults. Iraqi J Agric Sci. 2020;51(6):1670-1677. DOI: [10.36103/ijas.v51i6.1195](https://doi.org/10.36103/ijas.v51i6.1195)

التوزيع الجغرافي للقراد الصلب في جميع المحافظات العراقية

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الخلاصة

أجريت دراسة كبيرة وموسعة للكشف عن القراد الصلب في العراق خلال عام ٢٠١٩ حيث جمعت ٣٤٢١ عينة قراد من ١٨ محافظة عراقية والتي تمثل جميع مناطق العراق. أظهرت النتائج أن أجناس القراد التابعة لعائلته اللبوديات أكثر انتشارا وأوضحت الدراسة أن جنس القراد زجاجي العين كان هو السائد على الأجناس الأخرى في الدراسة الحالية. حيث سجل جنس القراد زجاجي العين أعلى نسبة في دهوك ٨٨,٦% بينما أدنى معدل كان في نينوى ٤٦,٩٤%، بينت الدراسة خمسة أنواع تابعه لج جنس القراد زجاجي العين وهي القراد زجاجي العين الأناضولية، القراد زجاجي العين القمحية، القراد زجاجي العين المكتشفة، القراد زجاجي العين الجملي، القراد زجاجي العين المحفورة. بينما كان ثاني أكثر الأنواع شيوعاً جنس القراد مروحية الراس وسجلت له ثلاث أنواع وهي القراد مروحية الراس الملغية والقواد مروحية الراس الدموية والقواد مروحية الراس القمحية وكانت أعلى نسبة وجدت في الأنبار ٤٨,٩% بينما الأدنى في دهوك كانت ٥,١٣%. كما بينت الدراسة وجود جنس ناخس الجلد في البصرة فقط وبنسبة ١,٧٢%.