

Supplementary Table S1. Monthly distribution of hard ticks obtained at each collection sites on Ganghwa-do in 2019 using collection traps

Collection site	Species	Dev'l stage	April	May	June	July	August	September	October	November	Total	
Grassland	<i>H. longicornis</i>	Female	3	64	103	48	23	1	0	0	0	242
		Male	11	36	51	25	1	0	0	0	0	124
		Nymph	245	436	208	29	15	5	0	0	0	938
		Subtotal	259	536	362	102	39	6	0	0	0	1,304
		Female	0	0	0	0	0	0	0	1	0	1
	<i>H. flava</i>	Male	0	0	0	0	0	0	2	0	0	2
		Nymph	0	0	0	0	0	2	0	2	0	4
		Subtotal	0	0	0	0	0	2	2	5	0	7
		Female	1	0	0	0	0	0	0	0	0	1
		Male	0	0	0	0	0	0	0	0	0	0
	<i>Ix. nipponensis</i>	Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	1	0	0	0	0	0	0	0	0	1
		Larva	1	17	6	0	2,047	110	0	234	0	2,415
		Subtotal	261	553	368	102	2,086	118	239	0	0	3,727
		Female	7	12	73	131	5	0	0	0	0	228
Grave	<i>H. longicornis</i>	Male	6	10	38	31	0	0	0	0	0	85
		Nymph	19	130	275	19	4	34	0	0	0	481
		Subtotal	32	152	386	181	9	34	0	0	0	794
		Female	0	0	0	0	0	7	7	7	0	14
		Male	0	0	0	0	0	0	7	2	0	9
	<i>H. flava</i>	Nymph	1	0	0	0	0	9	10	2	2	22
		Subtotal	1	0	0	0	0	23	19	2	2	45
		Female	0	0	0	0	0	0	0	1	0	1
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
	<i>Ix. nipponensis</i>	Subtotal	0	0	0	0	0	0	1	0	0	1
		Larva	0	1	1	0	185	69	0	28	0	284
		Subtotal	33	153	387	181	194	126	48	2	2	1,124
		Female	9	15	122	170	18	0	0	0	0	334
		Male	5	8	52	49	2	0	0	0	0	116
Copse	<i>H. longicornis</i>	Nymph	147	14	48	23	9	1	0	0	0	242
		Subtotal	161	37	222	242	29	1	0	0	0	692
		Female	0	0	0	0	0	1	1	0	0	1
		Male	1	0	0	0	0	4	0	0	0	5
		Nymph	0	0	0	0	0	0	0	0	0	0
	<i>H. flava</i>	Subtotal	1	0	0	0	0	5	0	0	0	6
		Female	1	0	0	0	0	0	0	0	0	1
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	1	0	0	0	0	0	0	0	0	1
	<i>Ix. nipponensis</i>	Female	0	0	0	0	0	0	0	0	0	0
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	1	0	0	0	0	0	0	0	0	1
		Larva	0	0	110	0	211	4	0	0	0	334
Subtotal	163	37	332	242	240	10	9	9	0	1,033		

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Supplementary Table S1. Continued

Collection site	Species	Dev'l stage	April	May	June	July	August	September	October	November	Total
Mountain road	<i>H. longicornis</i>	Female	23	17	98	88	20	1	0	0	247
		Male	19	17	40	18	2	0	0	0	96
		Nymph	115	32	72	16	6	8	0	0	249
		Subtotal	157	66	210	122	28	9	0	0	592
	<i>H. flava</i>	Female	1	0	0	0	0	2	0	0	3
		Male	1	0	0	1	0	1	1	1	4
		Nymph	2	1	0	0	0	0	0	1	4
		Subtotal	4	1	0	1	1	3	2	0	11
	<i>Ix. nipponensis</i>	Female	0	0	0	0	0	0	0	0	0
		Male	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	1	0	0	0	0	0
		Subtotal	0	0	0	1	0	0	0	0	1
		Larva	6	64	3	0	10	14	37	0	134
		Subtotal	167	131	213	124	38	26	39	0	738
Total			624	874	1,300	649	2,558	280	335	2	6,622