A Comparison of Parasitic Infestations of White-tailed Deer (Odocoileus virginianus) from Central and East Texas 1

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A Comparison of Parasitic Infestations of White-tailed Deer *(Odocoileus virginianus)* from Central and East Texas [1]

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Abstract

The deer from Tyler County, Texas, had heavy infestations of ticks *(Amblyoma americanum)* and were infected by the hemoprotozoan *(Babesia cervi)*. These two factors may be responsible for the unthrifty condition and low reproductive ability of the deer from Tyler County.

Introduction

This study compared the parasitic infestations of five adult deer from Llano County in Central Texas and five adult deer from Tyler County in East Texas in June and August of 1966. Samples of deer from these areas were selected in an effort to solve the problem which was raised by unexplained variations in reproductive capacity. The Llano deer population returned to normal numbers within one year following a hunting season in which bucks and does were collected. In contrast, the deer population of Tyler County did not repopulate as normally expected following a hunting season in which bucks were harvested.

The two counties differ in many ways. Llano is situated in an area in which the soil has a granite base with a sandy texture. The temperature averages 82° in the summer and 50° in the winter; there is a 230-day growing season. Rainfall averages 25 inches per year with most precipitation in the spring and fall. The predominant grasses are bluestem, gramas, panic, threeawn, windmill, and curley mesquite. Shrub growth consists of post oak, live oak, black hickory, mesquite, and Texas persimmon.[4]

In the pineywoods area of Tyler County, the soil varies from light and dark sands to sandy loams. The rainfall averages 45 inches per year and is usually distributed uniformly throughout the year. The vegetation consists of trees, shrubs, and grasses. The predominant grasses are Indian, bluestem, dallis, and bermuda.[2]

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Methods

The deer were examined for external parasites immediately after they were collected. The ectoparasites were preserved in 10% formalin and later identified. The deer were then necropsied; the abomasums, small intestines, and large intestines were removed, placed in separate plastic bags, and refrigerated until examined. All nematodes and external parasites were identified.[3]

Results

No external parasites were present on the deer from Llano County. A total of 54 internal parasites were present, 53 *Haemonchus contortus* and 1 *Oesophagostomum columbianum*. Thirty of these parasites were present in one doe which had pulmonary, pericardial, and peritoneal adhesions. The right front leg had a healed fracture of the metacarpal bone and was approximately four inches shorter than the other three legs.

Examination of Giemsa stained blood smears revealed the presence of *Theileria sp.* infection in all 5 animals from Llano County.

External parasites on the deer from Tyler County consisted primarily of heavy infestations of *Amblyoma americanum* (Lone Star Tick). The ticks were found in large numbers attached to the ears which had become contracted and misshapened. Reactions to tick infestations were present on the skin of the axillary, inguinal, and perineal regions. These tissue reactions consisted of erosions of the epidermis and draining cutaneous tracts filled with purulent exudate. Deer keds *(Lipoptena sp.)* were abundant.

TABLE 1. *A comparison of parasite infestations in deer from Llano County in Central Texas and Tyler County in East Texas*

	Llano County Deer					Tyler County Deer				
Parasites	1	2	3	4	5	1	2	3	4	5
Haemonchus contortus	3	7	10	3	30	17	8	13	25	0
Oesophagostomum columbianum	0	0	0	0	1	0	0	0	0	0
Setaria sp.	0	0	0	0	0	15	11	5	12	7
Gonglyonema pulchrum	0	0	0	0	0	*H	H	H	H	L
Amblyoma americanum	0	0	0	0	0	*H	H	H	M	L
Lipoptena sp.	0	0	0	0	0	*H	H	H	H	H
Theileria sp.	+	+	+	+	+	—	—	—	—	—
Babesia cervi	—	—	—	—	—	+	+	+	+	+

*H — Heavy infestation
M — Moderate infestation
L — Light infestation

Internal parasites in the deer from Tyler County consisted of *Setaria sp., Gonglyonema pulchrum,* and *Haemonchus contortus.* Table 1 contains information concerning the numbers of these parasites.

Giemsa stained blood smears of all 5 deer from Tyler County contained erythrocytes infected with *Babesia cervi.*[1]

Discussion

It is unlikely that the abomasal and intestinal parasites were present in sufficient numbers to have a detrimental affect on the deer from Tyler or Llano counties. Ticks were observed only on the deer from Tyler County. Heavy infestations of ticks and the resultant blood loss could kill young fawns and may be one of the several possible factors associated with low fawn survival.

The deer from Tyler County were infected with *Babesia cervi.* This parasite caused rapid destruction of erythrocytes and severe anemia in experimentally inoculated white-tailed deer. Natural infection with this organism and heavy tick infestation may be factors responsible for the unthrifty condition and low reproductive ability of Tyler County deer.

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