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Life cycle of brown dog tick *Rhipicephalus sanguineus* latreille, 1806 under laboratory conditions

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The brown dog tick, *Rhipicephalus sanguineus* (Acari: Ixodidae), is a three-host hard tick that feeds primarily on dogs, occasionally on other animals and rarely on humans. It is widely distributed around the world and acts as a vector of many pathogens, such as *Babesia canis*, *Ehrlichia canis*, and *Rickettsia conorii*. In Sri Lanka, *R. sangenius* has an island-wide distribution and is identified as the dominant dog tick species in the Wet zone. Biological parameters of the life cycle of *R. sangenius* were collected by experimental infestation of New Zealand white rabbits under laboratory conditions (Temperature 27±1°C; Relative humidity 70%-80%). All the life cycle stages: larvae, nymphs and adults successfully fed on the rabbits under laboratory conditions. Engorged females (n=47) had a mean weight of 133.2 (54-187) mg, completed oviposition in 14 (3-19) days with an average pre-oviposition period of 4.9 (4-7) days. Females laid an average of 1,414.2 (101-2760) of eggs. Eggs hatched after 29.6 (21-43) days of incubation. Larvae (n=100) had a parasitic period of 3.1 (2-3) days. Of the larvae introduced, 62.7% successfully fed on rabbits and dropped off. The unfed larvae survived up to 65.3 (52-73) days. Total of 31.1% nymphs dropped after 5.1(4-5) days and the moulting period was 14.3 (13-15) days, which had a mean weight of 5.4 mg. Unfed nymphs survived for up to 58 (37-45) days in the laboratory. The parasitic period of adults was 15.7 (7-15) days. The adult ticks (n= 15) completed feeding within 15.7 (7-15) days. Blood fed adult females lived for 18.2 (15-22) days and blood fed male lived for 317.4 (292-355) days. The Reproductive Efficiency Index (REI) and Reproductive Fitness Index (RFI) of the female were 12.7 (22-70) and 8.8 (1.8-20), respectively. The male to female sex ratio was 5:2 in laboratory raised adults. *Rhicephalus sangenius* completed its life cycle within 115.6 (±6.9) days. There are variations in the life cycle of Sri Lankan population of *R. sangenius* when compared to that of Italian and United States populations. These variations could be due to environmental conditions in different geographic regions.