This study was conducted to determine the effect of temperature and moisture stress on exsheathment process and infectivity of the infective larvae of the parasitic nematode ″Haemonchus contortus″. Laboratory conditions were used in which infective (L_(3)) of ″H. contortus″ were either subjected to gradually increasing temperatures, decreasing moisture or both. Post stress viability and exsheatment of L_(3) was determined prior to infection experiments. The viability of ″H. contortus″ after induction of anhydrobiosis declined significantly ($p<0.05$) from 85 to 60% in about 60 days. The results showed significant ($p<0.05$) delay in exsheathment in stressed larvae compared to unstressed larvae leading to low overall establishment (Infection). However, the proportion of the immature in relation to the mature parasites (hypobiosis) was significantly ($p<0.05$) higher in stressed compared to the unstressed L_(3). These results indicate that delayed exsheatment in stressed L_(3) contributes to low infectivity in ruminan