

A study was undertaken to establish the pattern and level of lipid utilization in third stage infective larvae (L₃) of *Haemonchus contortus* under temperature and moisture stress conditions. The stress factors were representative of an arid and semi arid site in Kenya. The L₃ were subjected to gradual increase and reduction in temperature and moisture, respectively, using a programmable cold/heat testing chamber. Optical density per area (Corrected average pixels) derived from image analysis of individual stained larvae using an image analysis software (UN SCAN IT gel^(r)), were used to estimate the lipid content of larvae subjected to different stress treatments. It was observed that lipid content of the L₃ declined and was negatively correlated with duration of exposure with significantly ($p = 0.012$) lower rates in moisture compared to temperature stressed L₃. It was also observed that the decline occurred in phases signifying possible adaptive physiological process aimed at preserving lipid reserves and viability. During revival, there was a drastic decline in lipid reserves probably as a result of increased lipid utilisation by the reviving larvae. The epidemiological significance of these findings in field larvae is discussed