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In vitro evaluation of oral formulations of Levamisole and Ivermectin against *Haemonchus contortus* procured from slaughter house of Faisalabad, Punjab, Pakistan

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Gastrointestinal (GI) parasitism is one of the main constraints limiting the production of livestock population. Different antihelmintics have been used by veterinary practitioners and farmers, however, unable to get rid of GI parasitism due to multiple factors including resistance against anthelmintic drugs. This study was conducted to estimate the comparative efficacy of oral formulations of levamisole (LEV) and ivermectin (IVM) against *Haemonchus contortus* under *in vitro* conditions. A total of 384 abomasa were purchased for this purpose. The lethal concentration (LC) 90 was calculated using Egg Hatch Test (EHT), Larval Development Test (LDT) and Adult Motility Test (AMT). Probit transformations were performed to transform a typical sigmoid dose-response curve to linear function. A total of 100 eggs/well were incubated in different concentrations of LEV (0.172, 0.086, 0.043, 0.0215, 0.01075 and 0.00538 µl/ml) and IVM (0.0020, 0.001, 0.0005, 0.00025, 0.000125 and 0.0000625 µl/ml) was used to determine the efficacy of these drugs against eggs, larvae and adult abomasa. The LC90 values of both the drugs were found higher than those recommended by WAAVP (0.1 µg/ml) which indicated development of anthelmintic resistance (AR) against eggs and adults of *Haemonchus contortus*. The dose dependent response of LEV and IVM against the adult *Haemonchus contortus* also confirmed the resistant worms in the population. Comparative probit analysis of the two drugs indicated significantly higher ($P<0.05$) efficacy of IVM than LEV. The study provided useful data on the development of AR for recommending an appropriate drug for preventive and therapeutic management of helminthiosis in small ruminant livestock.

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