SECTION A

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ENZYMES IN FILARIAL WORM *SETARIA DIGITATA*

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Inhibition of parasite specific enzymes by chemotherapeutic agents could be an effective way of controlling filarial infection. The parasite specific enzymes of filarial worms has not been well charted and in an attempt to identify such enzymes, the presence of key enzyme of metabolic pathways and their kinetic properties in crude extracts are being investigated.

The presence of lactate dehydrogenase (LDH) and alkaline phosphatase (AP) in *Setaria digitata*, an adult filarial worm present in the peritoneal cavity of cattle, was detected in crude extracts prepared by homogenising in a hand homogeniser.

The optimum pH for LDH activity was 7.5 in phosphate buffer (0.1 M) and it declined gradually on either side of the pH optimum. The Lineweaver-Burk plots for the substrate pyruvate and cofactor NADH were linear and gave Michaelis constants (K_m) of 1.25 mM for pyruvate and 0.116 mM for NADH. The specific activity of the enzyme was 0.019 μmoles min^{-1} mg^{-1}.

The AP assay was carried out in veronal buffer at pH 9.0. The K_m value for the substrate p-nitrophenol phosphate was 40 mM when enzyme extraction was carried out in 0.1 M phosphate buffer at pH 6.8. However, when extraction was carried out in the presence of added 1% Triton, whereby releasing the membrane bound enzyme, the K_m value was found to be 5.2 mM. Therefore it appears that AP exists in more than one form. The specific activity of the enzyme remained same in extracts prepared with and without added Triton.