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OPTIMIZATION OF THE HELMINTEX METHOD FOR THE DIAGNOSIS OF SCHISTOSOMIASIS MANSONI

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Schistosomiasis mansoni, caused by *Schistosoma mansoni*, is a parasitic infection affecting millions of individuals, particularly in tropical and subtropical regions. Early diagnosis is crucial for appropriate treatment and disease control. The Helmintex method is widely employed due to its ability to concentrate helminth eggs in fecal samples. However, its efficiency can be compromised by prolonged processing times and the presence of large sediment particles. To optimize this process, we aimed to introduce a three-dimensional (3D) filtering device, replacing the sieve-based step, to reduce filtration time and enhance egg recovery.

The prototype test employed a 3D device attached to a 60 mL syringe, in which pre-counted *S. mansoni* eggs were inoculated at the top of the filter, followed by the addition of 70% ethanol up to a total volume of 60 mL. With the plunger attached, the liquid was released into a 50 mL tube and centrifuged at 300 × g for 10 minutes. The filtered sediment was analyzed microscopically, demonstrating improved egg concentration and detection.

With this adaptation, the average filtration time was reduced, and the retention of larger particles enabled more efficient egg concentration. The variation in recovery after five repetitions was only 4%, indicating the method's reliability. This innovation has the potential to benefit large-scale diagnostic laboratories, particularly in endemic areas, contributing to more effective disease control. Further studies and cost-benefit analyses are necessary to validate this approach and ensure its applicability in diverse settings.

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