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OPTIMIZATION OF THE HELMINTEX METHOD: EVALUATION OF MAGNETITE POWDER AS AN ALTERNATIVE TO PARAMAGNETIC BEADS FOR *SCHISTOSOMA MANSONI* EGG RECOVERY

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The Helmintex (HTX) method employs paramagnetic beads to capture *Schistosoma mansoni* eggs in a magnetic field. It is considered a standard technique for evaluating diagnostic methods, particularly for cost-effective screening in low-endemic areas. However, the high cost of paramagnetic beads limits its broader application. This study aimed to assess the efficiency of magnetite powder (Fe_3O_4) as a cost-effective alternative for *S. mansoni* egg recovery after fecal sample fixation and filtration. The procedure followed Teixeira et al. (2007), with modifications by Favero et al. (2017). After debris reduction, 50 *S. mansoni* eggs were seeded in samples and exposed to a magnetic field using the Multi-6 Microcentrifuge Tube Separator (BioMag®). Recovery efficiency was compared between paramagnetic beads (50 mg/ml Fe_3O_4) and Fe_3O_4 powder at 50 mg/ml (A), 25 mg/ml (B), and 12.5 mg/ml (C), with three replicates per concentration. Eggs were stained using auramine-O (Au-O) and analyzed by fluorescence microscopy. At concentration A, excessive Fe_3O_4 deposition impaired fluorescence and hindered microscopic analysis, while concentration C yielded only 22.2% recovery. Concentration B achieved 80.5% recovery, surpassing the 55% obtained with paramagnetic beads. Although preliminary, these findings suggest that Fe_3O_4 powder is an efficient and lower-cost alternative to paramagnetic beads in the HTX method..

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