

## ABSTRACT

The soil-transmitted helminths which include hookworm Ascaris and Trichuris are adversely affecting the health status of one-fourth of the human population especially in the tropical and subtropical regions. Ways and means to diagnose the infections have been developed from the most simple to the complicated ones.

In the present study the recovery rate and reproducibility of five commonly used methods were compared basing on the ability to detect the eggs from fecal specimens. Recovery rate was determined from 505 fecal specimens with two examinations by each method, while reproducibility was tested on 71 known positive specimens with 30 repeated examinations by each method. The methods employed were Beaver's direct smear, Katz's modified Kato's thick smear, brine floatation, centrifugation and the culture method.

The percentage of recovery in light infections for the five methods (Beaver's direct smear, Kato's thick smear, brine floatation centrifugation and culture method) were as followed in the order of respectively;

Hookworm	-	58.19;	78.81;	77.96;	52.54;	85.87.
<u>Ascaris</u>	-	78.58;	92.45;	50.94;	66.03;	-
<u>Trichuris</u>	-	61.19;	88.05;	71.64;	52.23;	-

There was no moderate infection of Trichuris and the recovery rate for hookworm and Ascaris were as follow;

Hookworm	-	92.06	100.00	100.00	95.00	100.00.
<u>Ascaris</u>	-	100.00	100.00	100.00	100.00	100.00.

In hookworm light infection there was no significance difference between the thick smear and the brine floatation, both these methods did not differ significantly at 1.0% probability level ( $0.01 < P < 0.05$ ) with the culture method which exhibited the highest recovery, but they differ significantly with the direct smear and the centrifugation.

For Ascaris highest recovery rate was obtained by the thick smear and followed by direct smear. There was no significant difference between them and they differ significantly with the other methods. Highest percentage of Trichuris was also demonstrated by thick smear method, however, it did no differ significantly with that of brine floatation and direct smear at 5.0% and 1.0% probability level respectively.

In moderate infection there was nosignificant difference among the methods for both hookworm and Ascaris.

For reproducebility test, the overage percentage of recovery by the five methods were in order as follow respectively;

Hookworm	-	66.87;	88.30;	77.28;	59.32;	93.47.
Ascaris	-	91.58;	99.36;	82.54;	88.41;	-
Trichuris	-	41.43;	75.08;	64.92;	36.98;	-

Test for reproducibility of hookworm indicated that there was no significant difference between the culture method and thick smear and both of them differ significantly with the others. There was also no significant difference at 1.0% probability level among all methods for Ascaris. Highest reproducibility for Trichuris was shown by thick smear too. Statistically there was no difference in significance at 1.0% probability level with that of brine floatation but differ significantly with the others.

The method that was found to be most efficient was the Kato's thick smear. It was simple in performance, time saving and very suitable for field use. However, the direct smear was the most simple and the result was reliable to some extent. The advantage, disadvantage and recommendation for practical application of each method were also discussed.