

# USE OF ASCARIS SUUM DECORTICATED EGGS AS A MODEL TO ASSESS QUANTITATIVE COPROLOGIC TESTS EFFICACY

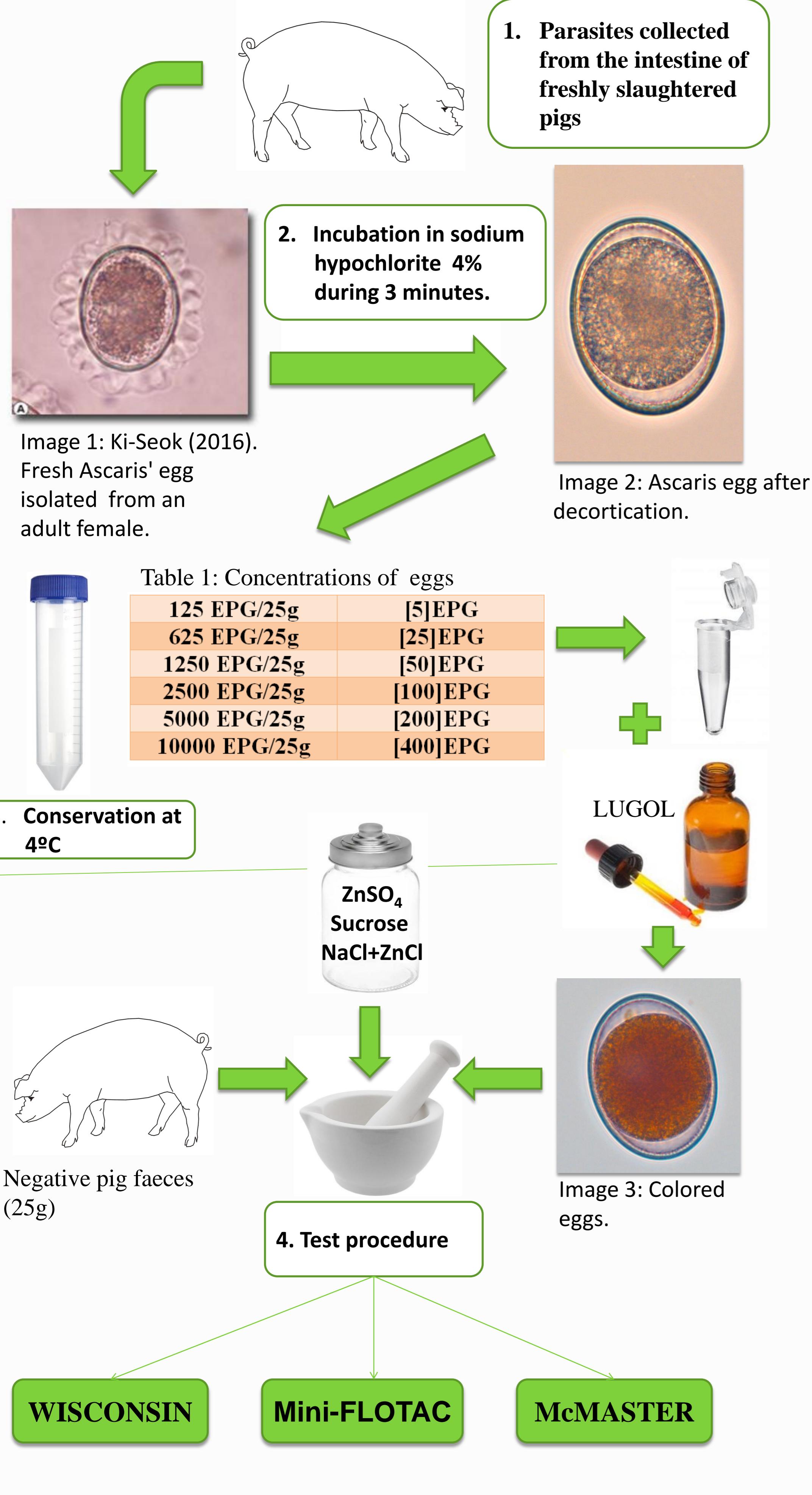
## OBJECTIVE

To compare the efficacy of three quantitative coprological tests by using pig faeces infected with known concentrations of *Ascaris suum* eggs.

## INTRODUCTION

Fecal examination is the main analytical tool to detect intestinal parasitic infections in veterinary practices. Among the different quantitative coprological methods, the McMaster technique is the most widely used, although other tests show higher sensitivity. It is the case of the Wisconsin technique, which can be also used as a qualitative technique; and the mini-FLOTAC technique, which is regarded as an evolution of the McMaster method.

## METHODS



## RESULTS

$$S (\%) = (\text{number of positive samples} / \text{total number of samples}) \times 100$$

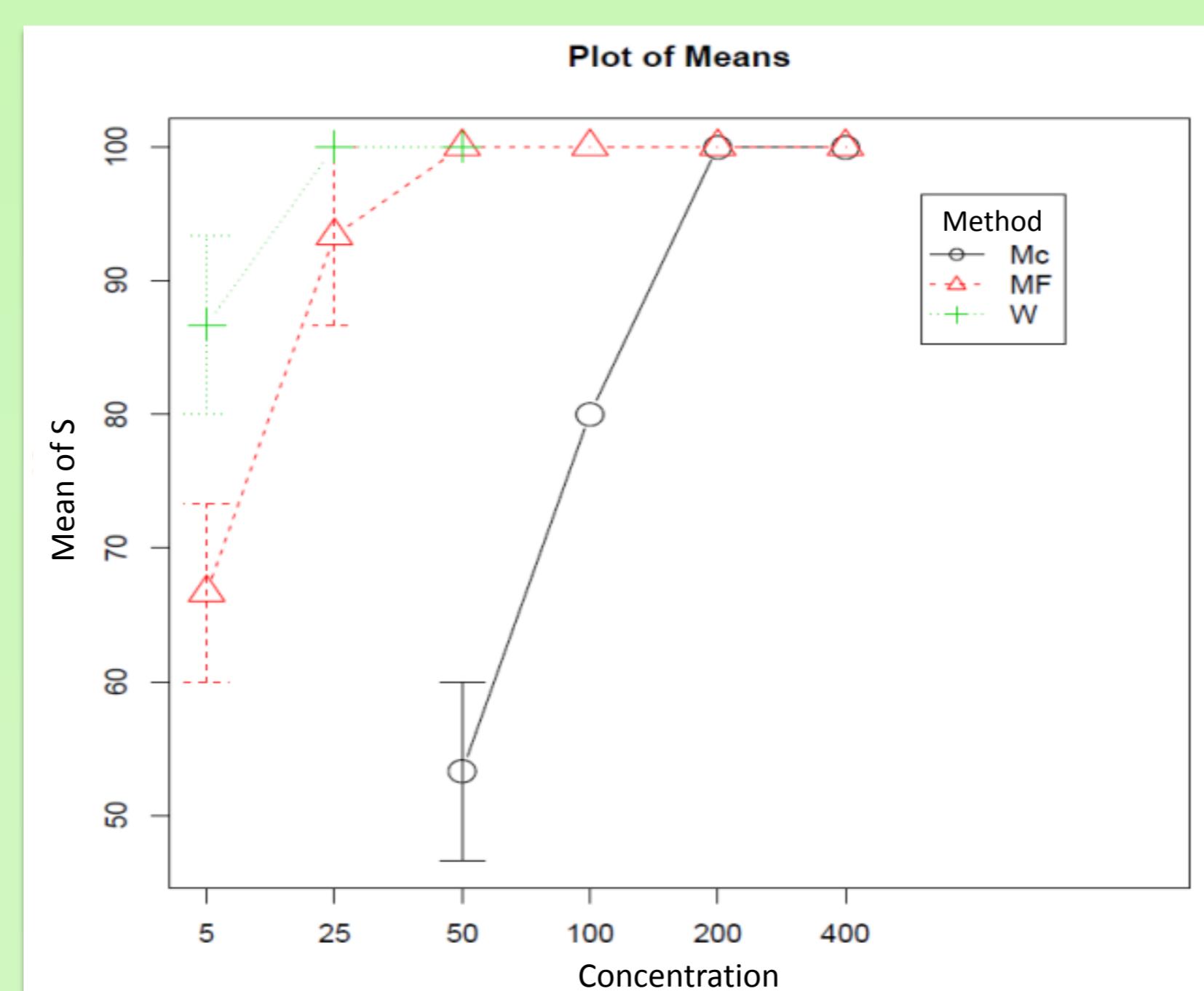


Figure 2 : Tests sensitivities depending on the concentration.

Table 1: Tests sensitivities depending on the concentration.

Concentration EPG	Wisconsin			Mini-FLOTAC			McMaster		
	S ( $\bar{X}$ )	SD	n	S ( $\bar{X}$ )	SD	n	S ( $\bar{X}$ )	SD	n
5	86.66	11.54	15	66.66	11.54	30			
25	100	0.0	15	93.33	11.54	30			
50	100	0.0	15	100	0.0	30	53.33	11.54	20
100				100	0.0	30	80	0.0	20
200				100	0.0	30	100	0.0	20
400				100	0.0	30	100	0.0	20
TOTAL	95.55	8.81	45	93.33	13.71	180	83.33	20.59	80

Sensitivity values were not affected by the flotation solution.

$$Ef (\%) = (\text{number of rediscovered eggs} / \text{number of total eggs in the sample}) \times 100$$

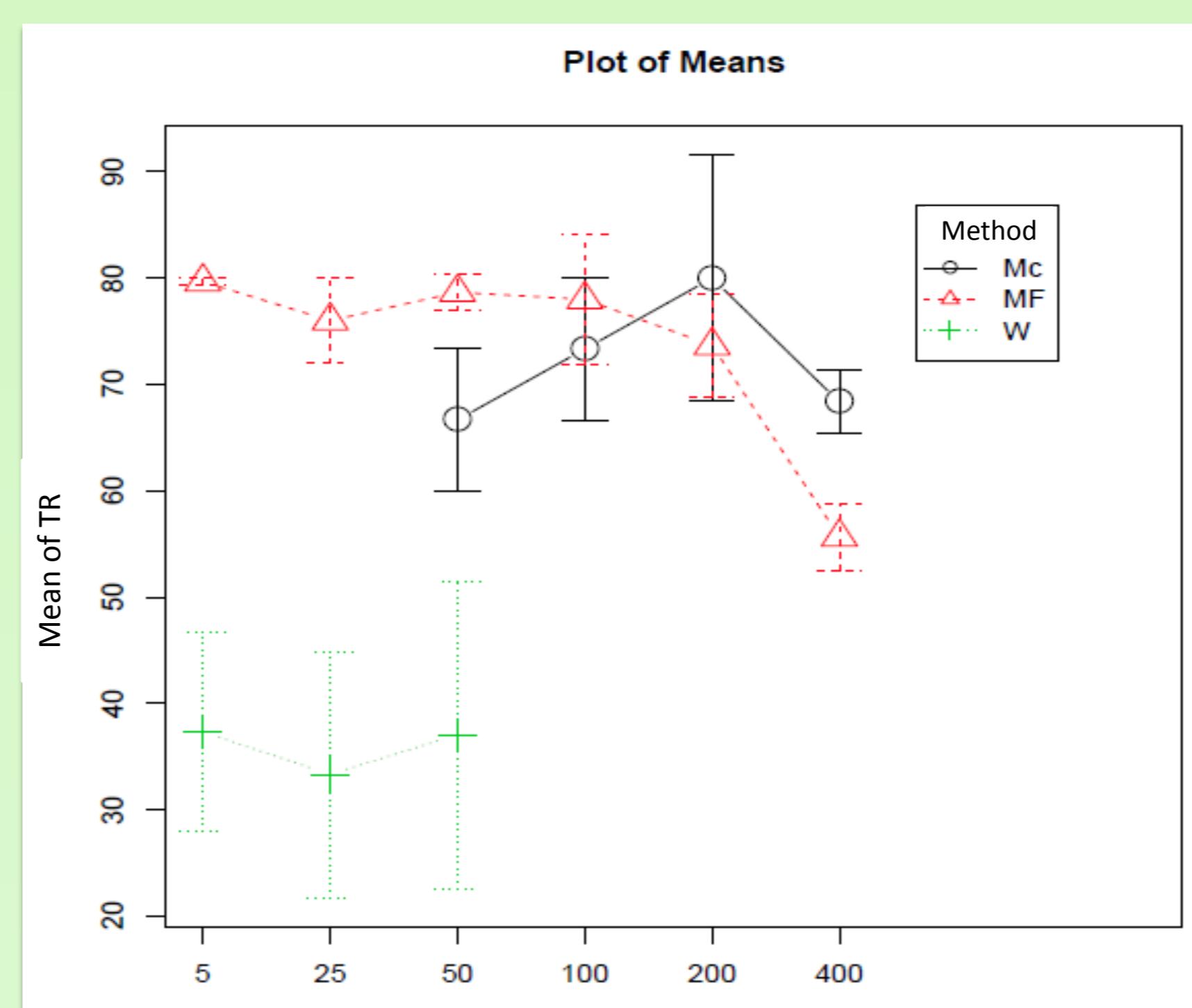


Figure 3 : Recovery Rate depending on the concentration.

Table 2: Recovery Rate depending on the concentration.

Concentration EPG	Wisconsin			Mini-FLOTAC			McMaster		
	TR ( $\bar{X}$ )	SD	n	TR ( $\bar{X}$ )	SD	n	TR ( $\bar{X}$ )	SD	n
5	37.33	16.16	15	79.66	0.57	30			
25	33.33	20.02	15	76.00	6.92	30			
50	37.36	25.01	15	78.66	3.05	30	66.66	11.54	20
100				78	10.53	30	73.33	11.54	20
200				73.66	8.38	30	80.00	20.00	20
400				55.66	5.48	30	68.00	5.20	20
TOTAL	35.91	25.01	45	73.61	10.19	180	72.00	12.46	80

Table 3: Recovery Rate depending on the solution.

Solution	Wisconsin			Mini FLOTAC			McMaster		
	S ( $\bar{X}$ )	SD	n	S ( $\bar{X}$ )	SD	n	S ( $\bar{X}$ )	SD	n
NaCl+ZnCl	46.00	6.43	15	75.75	12.34	30	82.50	12.58	20
Sucrose	47.80	11.87	15	68.75	8.14	30	70.62	10.87	20
ZnSO <sub>4</sub>	13.93	5.58	15	76.33	8.11	30	63.12	6.25	20
TOTAL	35.91	10.04	45	73.61	10.19	90	72.08	12.46	80

## CONCLUSIONS

- In the present study, the Wisconsin test showed the highest sensitivity, followed by the Mini-FLOTAC and the McMaster techniques.
- Conversely, the Mini-FLOTAC test showed the highest Recovery Rate values.
- Sensitivity values were not affected by the flotation solution, which is in disagreement with previous studies.
- According to the results obtained, *Ascaris suum* decorticated eggs are a reliable model to asses the efficacy of quantitative coprological techniques

## REFERENCES

- Ki-Seok, O., Geon-Tae, K., Kyu-Sung, A & Sung-Shik S. (2016). Effects of disinfectants on larval development of *Ascaris suum* eggs. *Korean J Parasitol* Vol. 54, No. 1: 103-107.