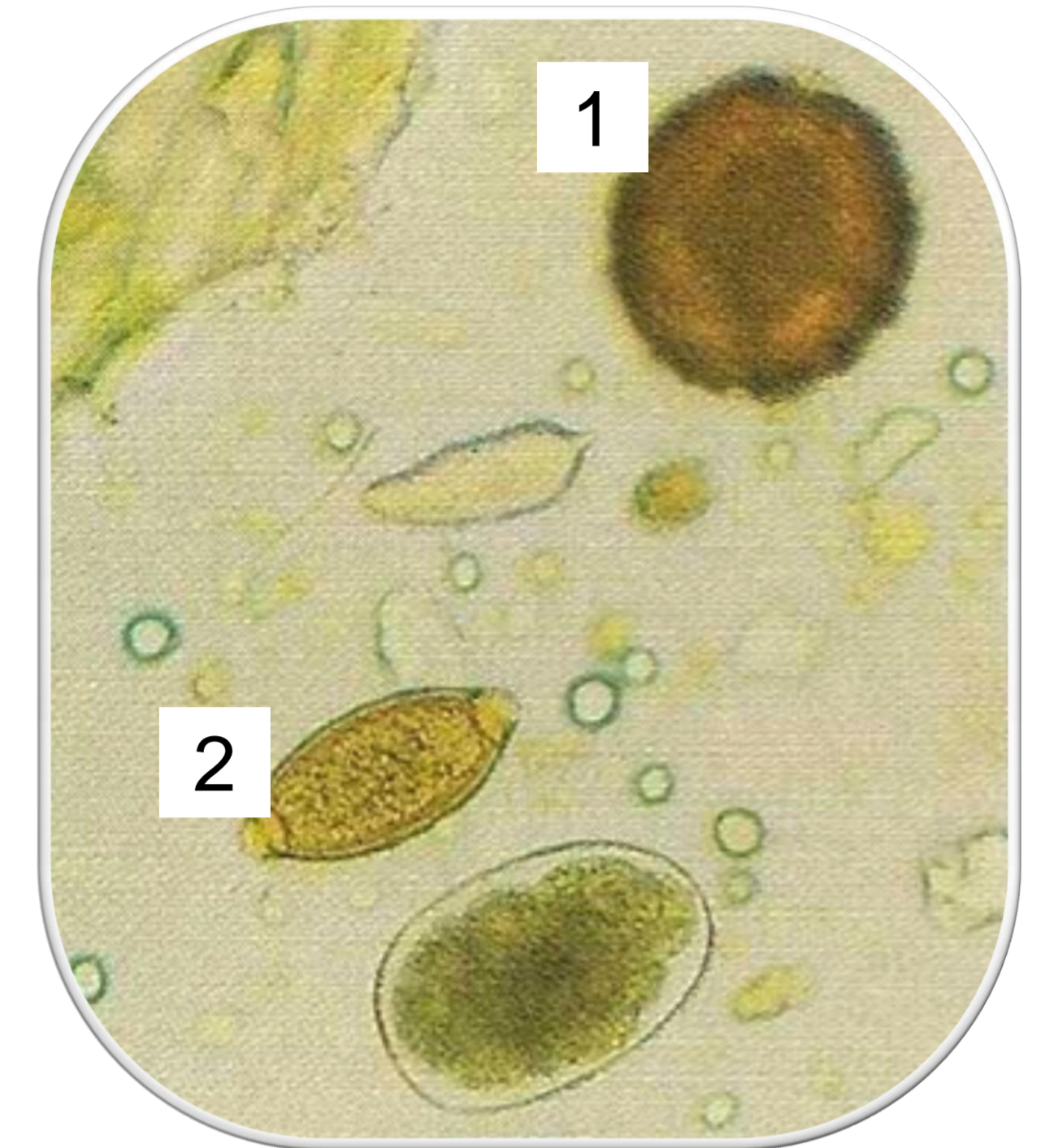


# NEMATODE SAMPLE PREPARATION FOR A RECLAIMED WATER PROFICIENCY TESTING SCHEME

Raquel Múrtula<sup>1</sup>, Adela Yáñez, Melissa Fernández, Elena Soria and Vicente Catalán  
ielab Calidad C/ Dracma 16-18 Pol. Ind. Atalayas 03114 Alicante (Spain).  
<sup>1</sup>r.murtula@ielab.es

## INTRODUCTION & OBJECTIVES

Due to the increasing use of **reclaimed water**, its quality control has become mandatory for public health protection in many countries. Different legislations include monitoring of parameters such as *Escherichia coli*, intestinal nematodes, *Legionella* spp., turbidity or suspended solids, and also include the methods that the laboratory must follow. **ielab** has developed a proficiency testing scheme (PTS) for reclaimed water and this work presents the preparation of intestinal nematode eggs samples for this PTS and the statistical approach followed.



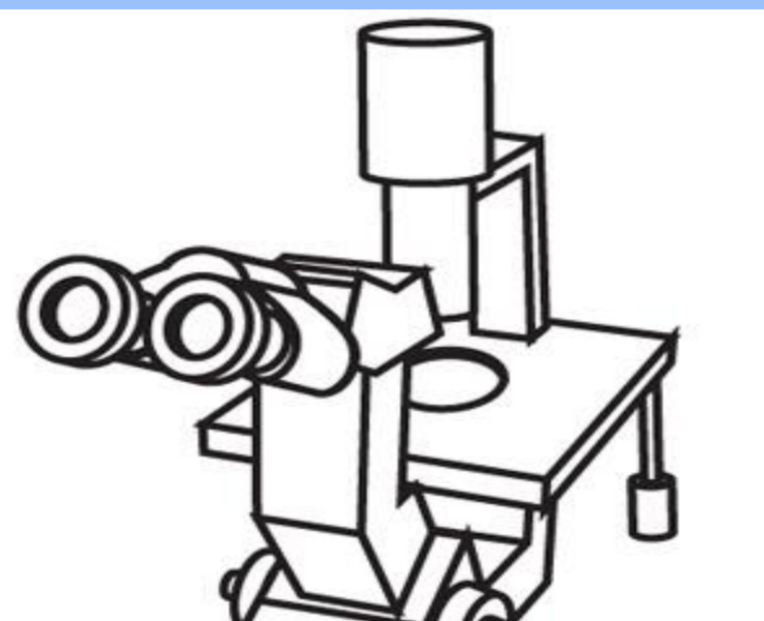
## MATERIAL, METHODS & RESULTS

### IELAB (PT PROVIDER)

#### 1) SAMPLES PREPARATION

Ten mL of reclaimed water spiked with defined concentration of different nematode eggs quantified using microscope:

*Ascaris lumbricoides*<sup>1</sup>, *Trichuris* spp.<sup>2</sup>, *Taenia solium*<sup>3</sup>, *Diphyllobothrium* spp.<sup>4</sup>, *Fasciola* spp.<sup>5</sup> and/or *Schistosoma* spp.<sup>6</sup>



#### 2) SAMPLES DELIVERY

### LABORATORY PARTICIPANT

(More than 35 laboratories)

#### 3) ANALYSIS OF THE SAMPLES

1mL direct IDENTIFICATION

9mL + 10 L water QUANTIFICATION (whole process)

HOMOGENEITY AND STABILITY  
flow cytometry

STATISTICAL ANALYSIS  
(ISO 13528)

#### 5) ROUND REPORT ISSUE

- ✓ Kernel density distribution
- ✓ Recovery study to show the effect of the concentration process (55%)
- ✓ Calculation of the Assigned value and its Uncertainty
- ✓ Evaluation of species Identification (90% correct identification)
- ✓ Performance assessment: z-score calculation (95% z-score  $\leq |2|$ )



## CONCLUSION

The use of flow cytometry technology in the assays of nematode eggs samples facilitates the performance of homogeneity and stability studies. The samples used in this scheme are suitable for the assessment of laboratory performances for analysing this parameter in reclaimed water.