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# Occurrence of *Cryptosporidium* spp. oocysts in low quality water and on vegetables in Kumasi, Ghana.

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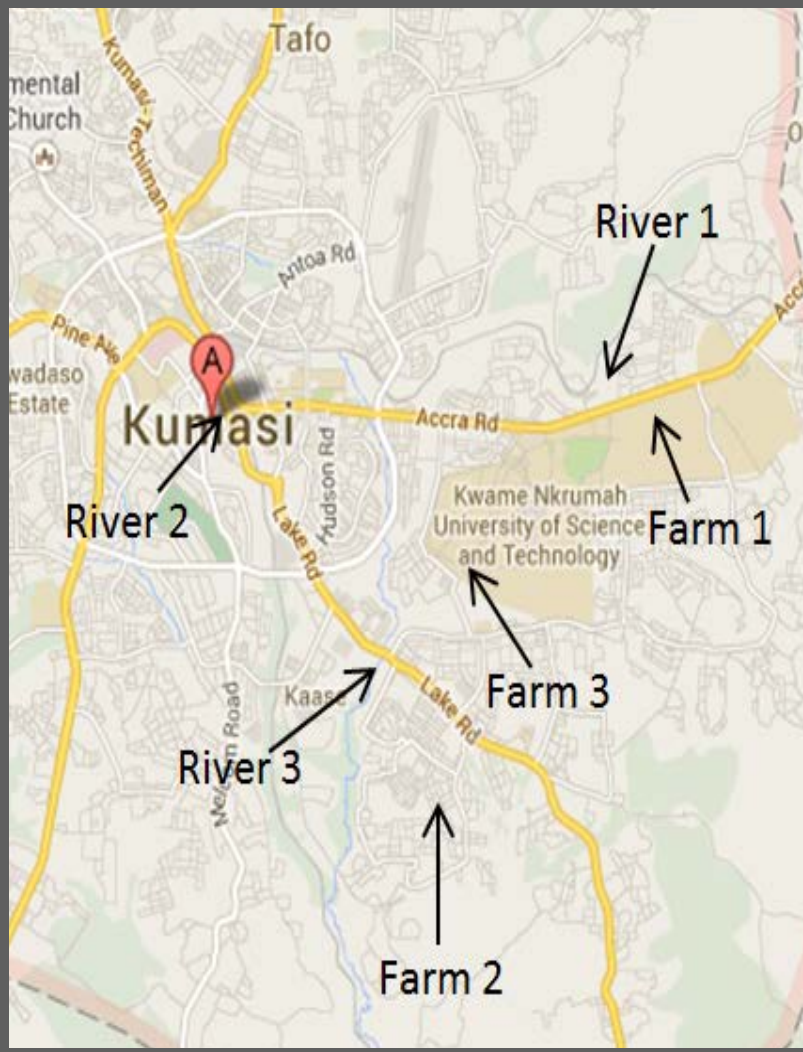
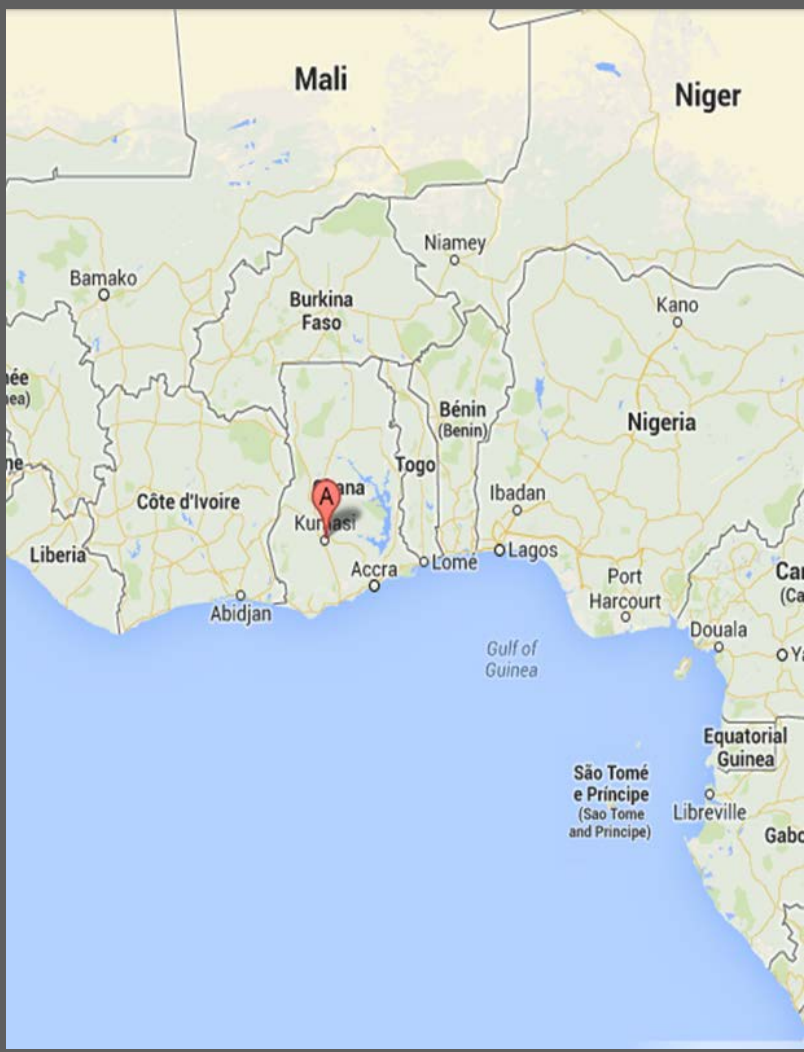


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# Occurrence of *cryptosporidium* spp. oocysts in low quality water and on vegetables in Kumasi, Ghana.



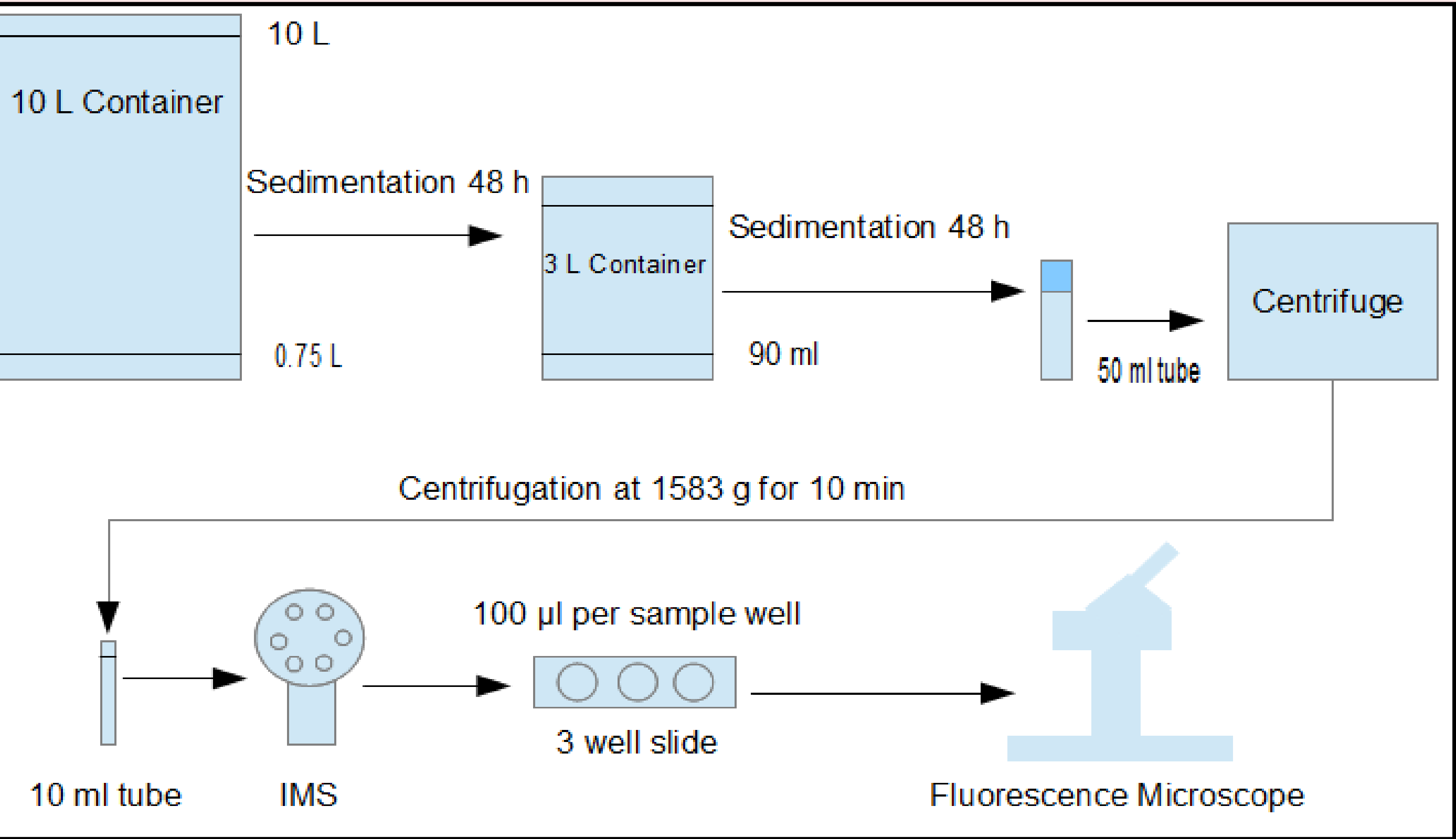
## INTRODUCTION

The use of low quality water as a source of irrigation is common practise in many countries where freshwater resources are scarce. Low quality water may carry pathogenic microorganisms including *Cryptosporidium* oocysts, which can be transferred to vegetables via irrigation.

**Aim of the study:** Determine prevalence and concentration of *Cryptosporidium* oocysts in low quality water and on vegetables in and around Kumasi City, Ghana.

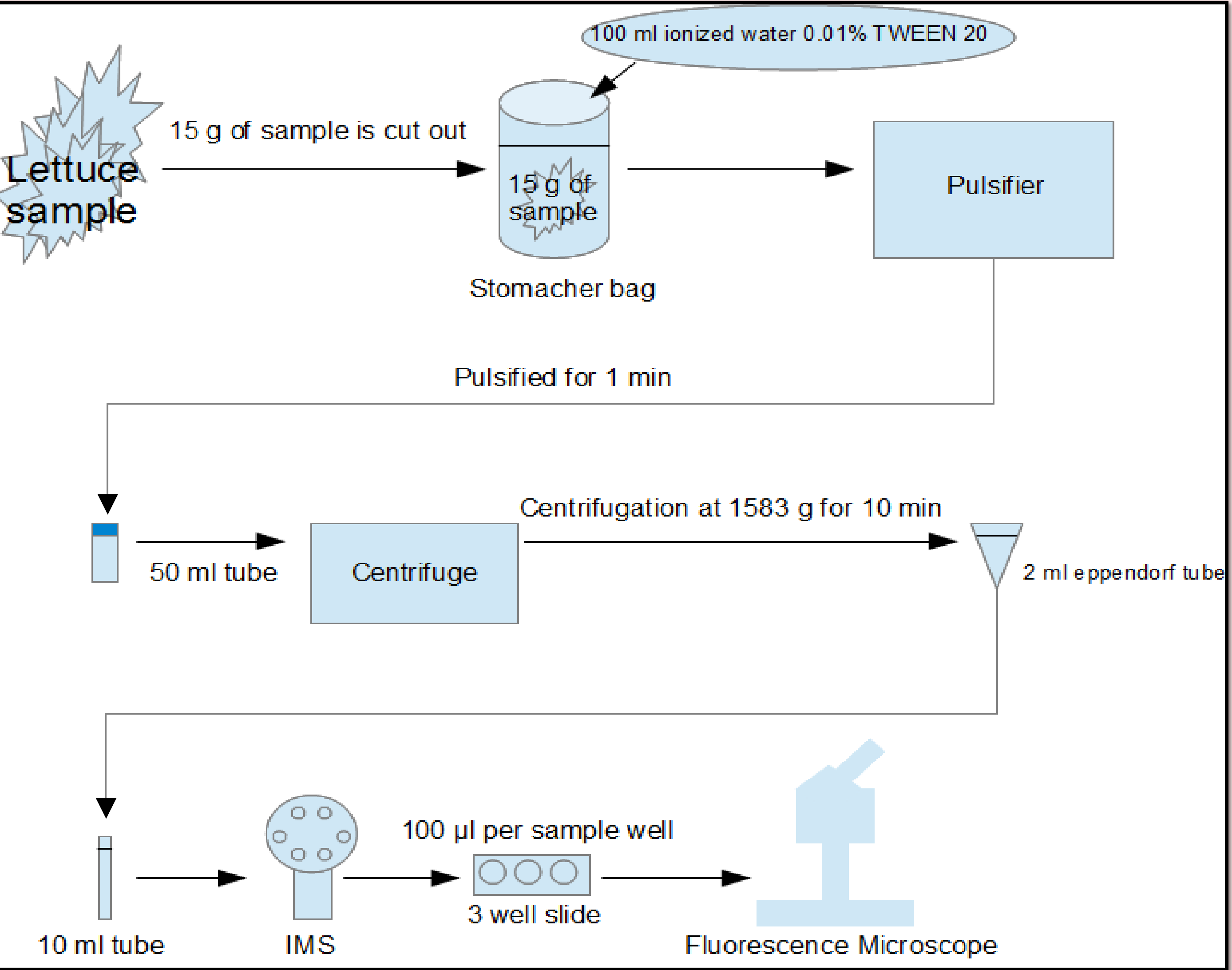
## Materials and methods

### Purification of oocysts from water samples



Recovery efficiency 1.9%

### Purification of oocysts from lettuce samples



Recovery efficiency 9.3%

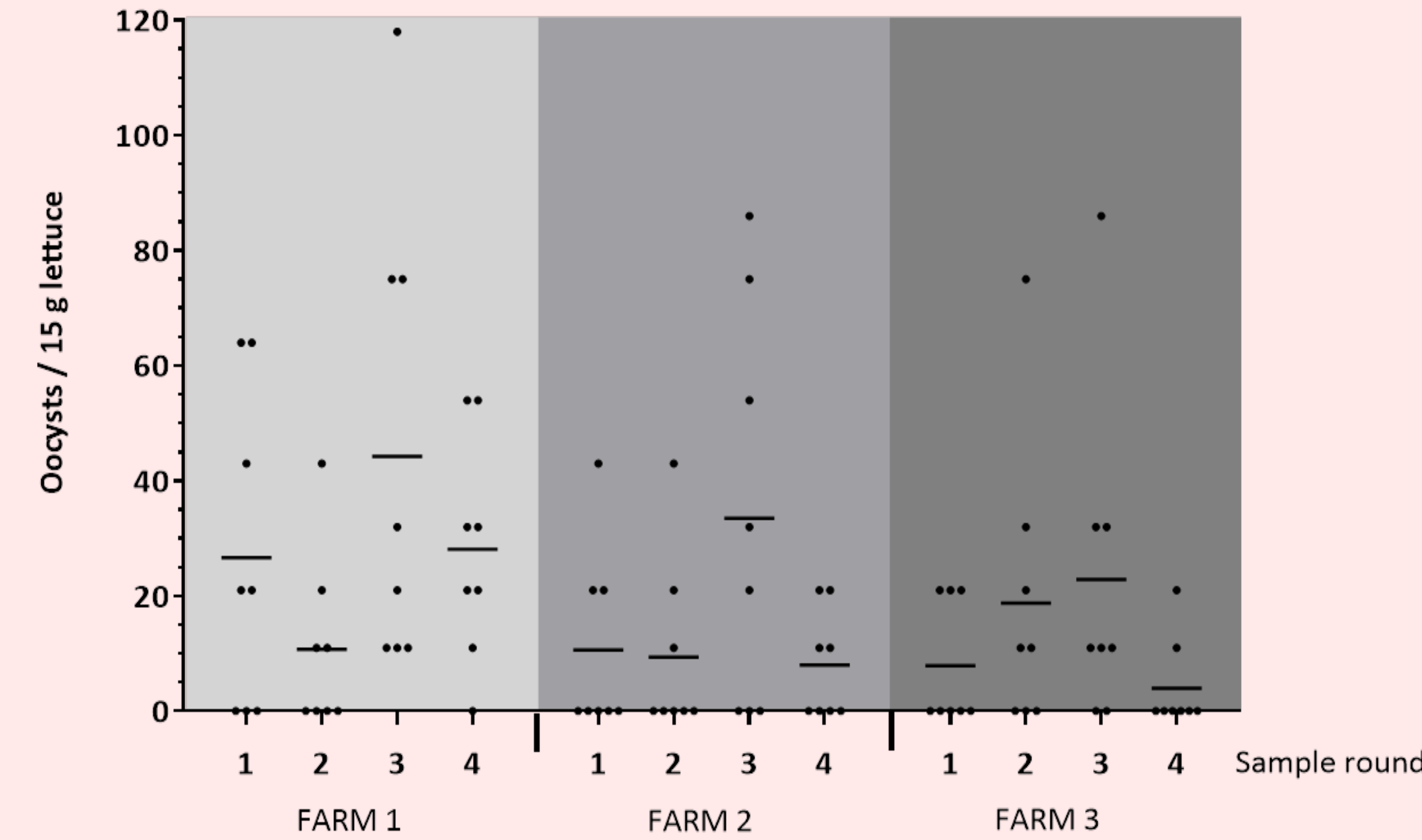
## RESULTS

### Water recovery data of oocysts

Oocysts/10 L	Sampling round			
	Round 1	Round 2	Round 3	Round 4
Farm 1	<53	53	<53	<53
Farm 2	368	211	<53	53
Farm 3	632	32368	53	<53
River 1	<53	53	105	105
River 2	579	158	316	158
River 3	53	105	684	263

Water samples analysed: 24  
Prevalence: 75%  
Oocyst mean: 1513 ± 6575.4 / 10 L

### Lettuce recovery data of oocysts



Lettuce samples analysed: 96  
Prevalence: 43%  
Oocysts mean: 19 ± 24.8 / 15 g lettuce

## CONCLUSION

- This study documented:
- High prevalence and concentrations of *Cryptosporidium* spp. oocysts in water and on vegetables consumed raw.
  - The need for development of a QMRA model and analysis of *Cryptosporidium* spp. and viability of oocysts.
  - Incoherency of water and lettuce contamination.

### SaWaFo



Safe Water for Food