

Launch of a new EQA scheme for Molecular detection of Faecal protozoa by UK NEQAS Parasitology

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Background

Protozoan infections still cause significant morbidity and are responsible for a large portion of infectious gastroenteritis. They are even believed to be twice as common as bacterial causes. These commonly recognized pathogenic protozoa include *Giardia duodenalis* (synonyms *Giardia intestinalis* and *Giardia lamblia*), *Cryptosporidium* species and *Entamoeba histolytica*.

Because of the clinical importance of these protozoa, rapid and sensitive detection with standardised diagnostic procedures are needed in order to allow specific and rational treatment. As a result, recent times have seen increased use of molecular methods for detection.

Various molecular methodologies exist, each with their own pitfalls and limitations. Thus, the provision of a fit-for-purpose qualitative External Quality Assessment (EQA) or Proficiency testing scheme for these parasites is very timely.

A pilot distribution was sent out in March 2020 and the Scheme went live in August 2020.

Methods

Freeze dried specimens were prepared using clinical samples or cultured parasites spiked in PCR negative faeces.

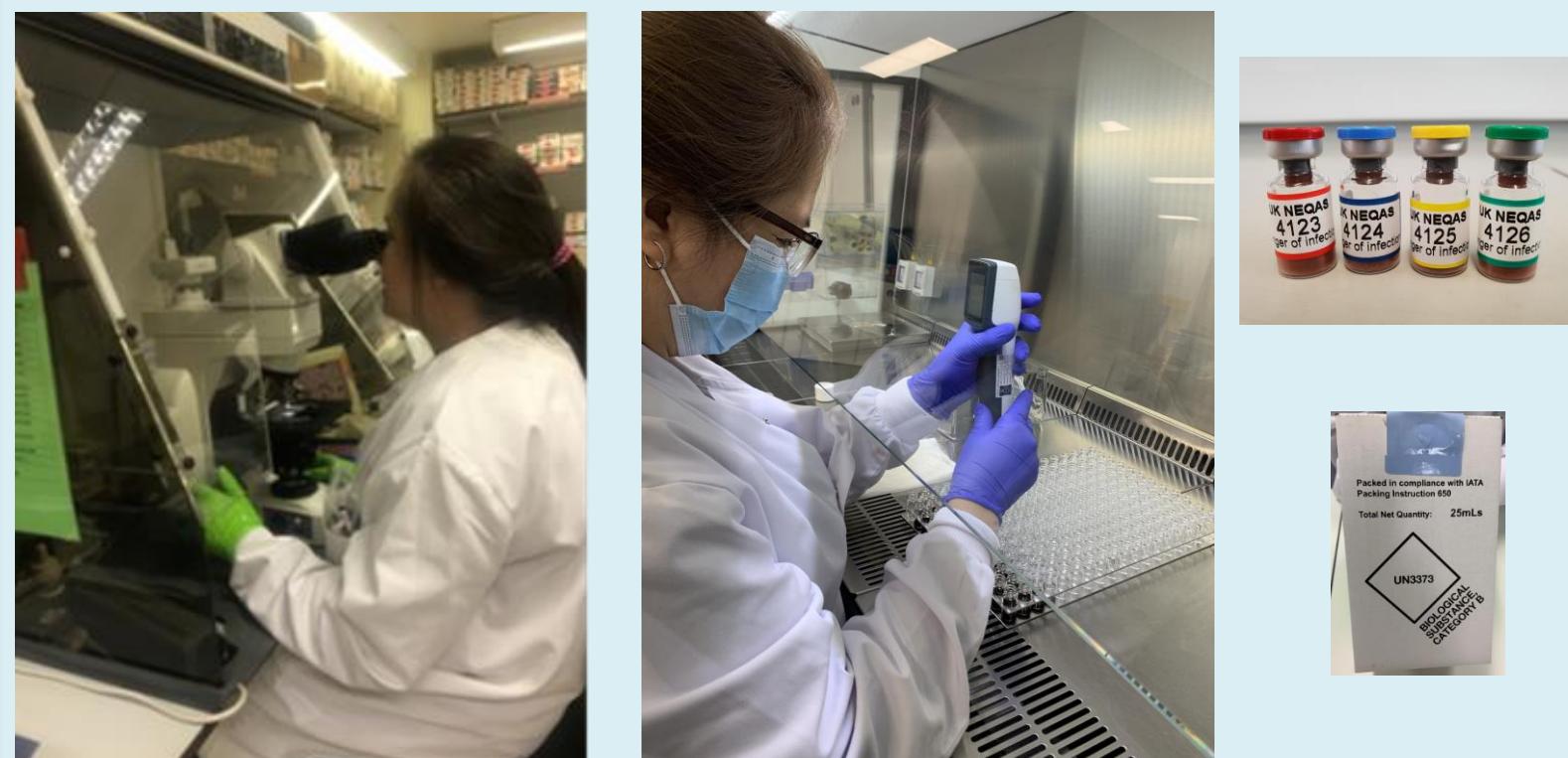
4 specimens were included in the pilot and 2 specimens were included in the LIVE round.

Samples were shipped at ambient temperature.

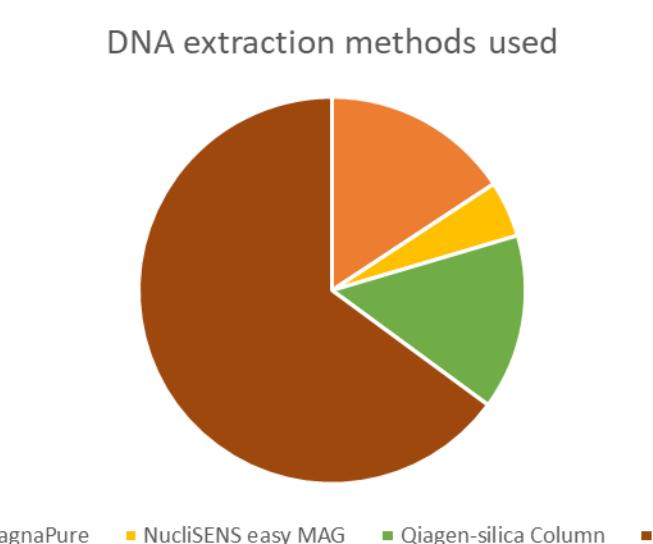
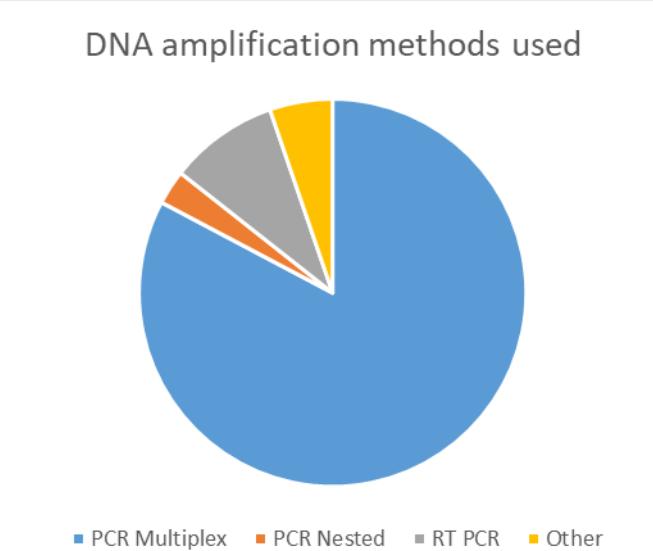
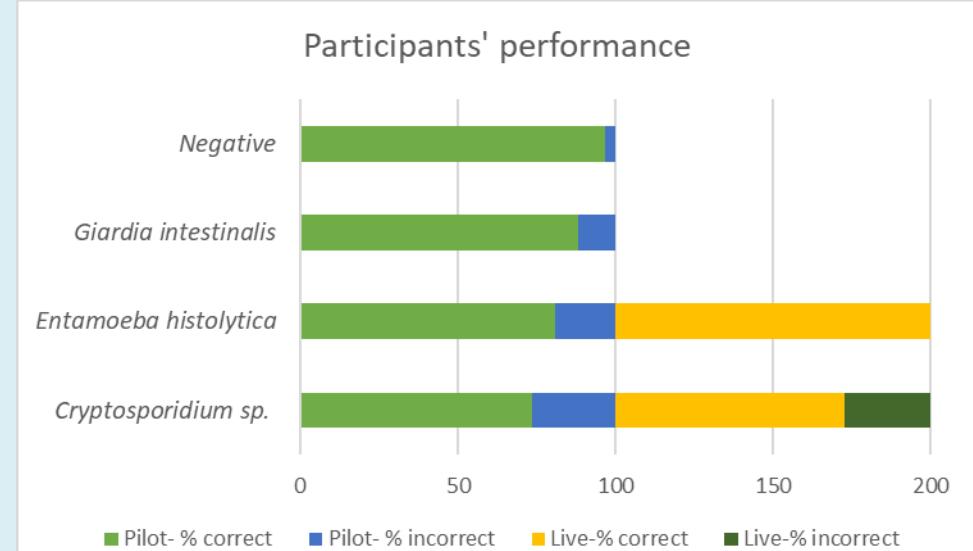
Participants were allowed three weeks to submit their results using the NEQAS web portal.

Participants did not receive any scores for the pilot round. Participants were scored for the LIVE round with +2 for correct answer and -2 for incorrect answer.

Specimen Preparation



Results



Results

Results obtained by participants were in good agreement with the pre- and post- distribution results.

So far, these EQA samples have worked well in all DNA extraction and amplification methods used by participants. No one method of amplification or extraction was associated with poor performance by participants.

Freeze dried faeces is a suitable matrix especially as it stores and travels well.

Samples were homogeneous and stable during the distribution process, as evidenced by the spread of participant results.

Conclusions

UK NEQAS Parasitology have produced a fit-for-purpose EQA scheme for molecular detection of faecal protozoa.

Next steps

The accreditation process for ISO 17043:2010 is underway (expected by March 2021).

Work towards solely culture based samples.

Make the scheme quantitative where possible.

Introduce additional faecal parasites into the EQA panel.

Acknowledgements

Pilot and Live scheme participants

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Waterborne Inc. for *Giardia* and *Cryptosporidium* cultures