Comparative analysis of Internal Transcribed Spacer 1 based (ITS1) PCR with two species-specific PCR for the detection of *Trypanosoma. vivax* in Ugandan cattle

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Trypanosoma vivax is a major parasite that causes significant livestock production loss in Africa. Diagnosing trypansomal infection using traditional techniques has proven challenging; instead PCR has been widely applied within a research setting. Primers targeting the internal transcribed spacer (ITS) region have provided a pan-trypanosomal PCR reaction, while several *T. vivax* species-specific primers have been designed based on stocks isolated from different regions in Africa. This study aimed to determine the most suitable PCR-based diagnostics test for detection of *T. vivax* in East Africa. A comparison of two species-specific primers, ILO1264/1265 and TvPRAC, with the universal ITS1 CF/BR primer was carried out upon 369 Ugandan cattle blood samples collected on FTA cards. The ITS1 PCR detected *T. brucei, T. congolense* and *T. simiae*, with a prevalence rate of 5.96%, 2.71% and 1.63% respectively in addition to a *T. vivax*-like amplicon of around 250bp; this band appeared in 112 samples. However, neither species-specific PCR reported any infection within the tested samples, suggesting the absence of *T. vivax*. While the ITS *T. vivax*-like band is yet to be verified, these results clearly demonstrate the need for further investigation in order to understand the potential 'environmental' sources of this amplicon, and the requirement to agree a consensus approach to the diagnosis of this parasite by molecular means.