

Assessing the Subjectivity of Loop-Mediated Isothermal Amplification Results

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Nagana, the cattle disease resulting from infection with African trypanosomes, costs the livestock industry an estimated US\$ 4.75bn each year through associated losses of dairy production, animal productivity, and reduced fertility. The Polymerase Chain Reaction is currently considered the gold-standard diagnostic test for African animal trypanosomes. However, given the cost and requirement of resources associated with PCR, there is a need for the development of tools more suited to the resource-poor setting, facilitating pen-side diagnosis. Loop-Mediated Isothermal Amplification (LAMP) is considered a suitable candidate for this role. It is an isothermal reaction and provides results visible to the naked eye, although this has caused concerns regarding the subjective nature of the test. This study aimed to assess the readability of LAMP results by assessing the role of inter-reporter effects. Two pre-diagnosed sample sets were presented to 30 participants. Participants were asked to assess each sample as positive or negative and comment on their confidence in the diagnoses given. The findings demonstrate that inter-reporter effects are insignificant regarding the diagnosis of Trypanosome infection within this sample set and go some way to addressing the lack of confidence that has previously been expressed in the visible interpretation of this diagnostic approach.