

## Evaluation and comparison of two point-of-care tests to support treatment decisions in non-severe bovine clinical mastitis

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Clinical mastitis is a common disease in dairy cows and the most common reason for antimicrobial usage. Information about clinical mastitis (CM) causing pathogen is important to support farmers to adopt targeted treatment decisions and ensure prudent use of antimicrobials. While there are available multiple point-of-care tests for identification of the pathogen, farmers are more interested in a simplified diagnostic test that allows treatment advice. We evaluated the performance of two point-of-care (POC) tests, a simplified slide test kit (VétoSlide, Vetoquinol) and a commercially available plate-based test (VétoRapid, Vetoquinol), as tools for differentiation of gram-positive mastitis from other forms of mastitis and support farmers' treatment decisions in cases of non-severe CM. The performance of the POC tests was evaluated against a reference test consisting of bacteriological culture and matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-ToF). Milk samples (n = 156) were obtained from cases of clinical mastitis on seven Scottish farms and diagnostic tests performed in the laboratory. After removal of contaminated samples (n = 23) and organisms with unconfirmed species identity (n = 3), the simplified slide test outperformed the plate test in accuracy (80.7% vs 74.3%) and positive predictive value (79.7% vs 70.0% respectively), whilst negative predictive value was the same for both tests (82.0% vs 82.1%). These results demonstrate that both POC tests can be useful tools to support treatment decisions and implement targeted or selective treatment in non-severe CM as a means to reduce antimicrobial use and avoid blanket treatment. The simplicity of the slide test makes it an attractive tool for farmers and may help its uptake.