



**87** Research paper

**Biosensors for on-farm diagnosis of mastitis** by Martins, S.A.M., Martins, V.C., Cardoso, F.A., Germano, J.H., Rodrigues, M.C., Duarte, C.M., Bexiga, R., De Freitas, S.C. and P.P. de Freitas  
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in **Significant Impact Group(s)**: Precision Livestock Farming & Early detection \ Sensor technology ; Pathogen management

Species targeted: Dairy;

Age: Adult;

Outcome Parameter(s): Mastitis indicative markers

**Summary:** Bovine mastitis is an inflammation of the mammary gland caused by a large number of infectious agents with devastating consequences for the dairy industry. Management mastitis usually means using antibiotics to treat and prevent the disease, which can be problematic because of increased antimicrobial resistance. Typical diagnostic methods are based on somatic cell counts (SCC) and plate-culture techniques. But these methods are not quick and there is quite a lot of interest in making faster solutions that could provide onsite information, which would speed up the choice of treatment. Biosensors are tools that can convert the presence of biological particles into an electric signal. Together with microfluidics, biosensors can be used in the development of automated and portable diagnostic devices. This review describes current approaches for mastitis diagnosis and the latest outcomes in biosensors and lab-on-chip devices with the potential to become real alternatives to standard practices.

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**Where to find the original material:**

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