

Preliminary study on the use of gamma-interferon test in the context of buffalo brucellosis diagnosis as a diagnostic deepening tool

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According to current regulations, Complement Fixation Test (CFT) is the reference assay for the diagnosis of brucellosis (1). The use of the gamma-interferon (γ -IFN) test to diagnose the disease on water buffalo can assess the reactivity of samples as a confirmatory or complementary strategy as described by Adone *et al.* (2) for cattle. The paper describes the use of the gamma-interferon (γ -IFN) test in comparison with official serological tests.

Serum and heparinised blood samples from brucellosis-free (BRC-F) (n=29) and brucellosis-infected (BRC-I) (n=150) herds were collected from the caudal vein and delivered to the laboratory within six hours, within the Italian national plan for the control of brucellosis. Rose Bengal Test (RBT) and CFT were carried out according to the official procedures (1-2). Blood samples (1 mL) were stimulated with Brucellergene OCB (Synbiotics Europe, France) (40 U per well) (3) using the stimulation with phosphate-buffered saline (PBS) as negative control. The γ -IFN production was assayed by using the BOVIGAM TB kit (Thermo Fisher Scientific Inc., Waltham, MA USA) according to the manufacturer's instructions.

The concordance value for γ -IFN with respect to CFT was 100% and 68% for BRC-free and BRC-infected herds respectively. The sensibility and specificity for BRC-infected herd with respect to CFT were 98% and 51% respectively. Therefore the γ -IFN test reveals a greater number of individuals come in contact with *Brucella* spp. but not necessarily positive to the official tests.

The γ -IFN test can be a valuable tool for deepening the diagnosis of brucellosis in particular for early identifying, within an infected herd, the subjects come into contact with *Brucella* spp. The γ -IFN test can be a strong instrument to eradicate the outbreaks.