

Bovine brucellosis in dual-purpose cattle herds and its potential economic impact in the Colombian Caribbean region

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Abstract

Bovine brucellosis (BB) is a cosmopolitan zoonotic disease caused by certain bacteria of the genus *Brucella*. It has negative health implications for the cattle, economic implications for the owners and is present in numerous cattle and wildlife populations worldwide. To determine the seroprevalence of BB in dual-purpose herds and assess its impact in the southern part of the Department of Atlántico, northern Colombia. 1,000 female cattle were tested for brucellosis, using the Rose Bengal Plate Test (RBPT) and indirect ELISA (iELISA) as screening and confirmatory tests, respectively. Of these, 100 animals tested positive by RBPT and 204 were inconclusive, while 38 positive animals were identified by iELISA. Consequently, the apparent seroprevalence was 3.8%, and the estimated true prevalence was 4.4%. Based on estimates of the economic losses caused by BB, the cost was calculated at \$2,496,364 COP (\$822 USD) per animal. The costs identified in this study include medication costs, loss of lactation, and others. It highlights the significant impact of BB on food security, particularly concerning the availability of and access to bovine food products, as well as on the economy of livestock farmers in the region.