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Prevalence and associated risk factors of bovine tuberculosis in Mecha district, Northwestern Amhara, Ethiopia

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Background & Aim: Bovine tuberculosis is a chronic debilitating disease of animals characterized by the formation of granulomas (tubercles) in tissues and organs. This study aimed to estimate the prevalence of Bovine tuberculosis and associated risk factors.

Method: This is a cross sectional study conducted from November 2016 to June 2017 on dairy farms found in Mecha district, Northwestern Ethiopia. Tuberculosis Caudal Fold Tuberculin Test (TCFTT) and TB Lipoarabinomannan (LAM) Antigen Test (TLAT) were used to investigate the disease. Information from owners was collected using questionnaire. Sample size was determined using single population proportion sample size determination techniques and a total of 385 cattle were tested using TCFTT and 220 using TLAT.

Results: In this study, the animal level prevalence of BTB was 1.6% (6/385) by TCFTT, while it was 5.9% (13/220) by TLAT. One-point four percent (3/220) animals were positive for both tests. Similarly, herd level prevalence of 3.75% (6/160), 10% (12/120) and 2.5% (3/120) were recorded by using TCFTT, TLAT and both tests, respectively. Based on the current finding, the Kappa test indicated that the two tests agreement was poor (Kappa<0.4). Herd size and management of the farm showed a significant association for the occurrence of bovine tuberculosis (p<0.05), whereas, age, body condition, and breed of animals (P<0.05) were significant contributing factors for bovine TB occurrence at the cow level while using TCFTT. Of the total 71 respondents 15(21.1%) knew about Bovine Tuberculosis (BTB) and 10(14.1%) knew BTB being a zoonotic disease with a history of at least one human TB patient.

Conclusion: In conclusion, the study revealed an overall low-level prevalence of BTB in the dairy cattle and farms (herds) as well as low knowledge's regarding the disease. Although the test indicated a low level of the problem, this should be taken as warranty and requires designing of an acceptable control strategy of disease before reaching its climax and poses great socioeconomic impacts as well as public health concern. Besides, raising community awareness regarding the disease is suggested.

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