# Occurrence and economic impact of cystic echinococcosis in cattle slaughtered in the Matabeleland Region, Zimbabwe

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## Abstract

**Background**: Cystic echinococcosis is a neglected disease responsible for millions of infections in both animals and humans. The toll on the global economy is estimated to be in the billions of United States dollars. Although much effort has been made by public health authorities to curb the rise in new infections, the occurrence of cystic echinococcosis is still being noted, especially in low-income countries. This study was conducted in the Matabeleland region of Zimbabwe to determine the incidence of cystic echinococcosis in bovines.

**Methods**: Meat inspection records from 2011 through 2021 kept at licensed abattoirs in the Matabeleland region were used to generate annual total figures of bovines slaughtered in the region, together with the corresponding number of organs condemned due to cystic echinococcosis. Descriptive statistics showing the overall incidence in each year, incidence per district, and cysts in infected organs were expressed as a percentage of the total number of cattle slaughtered per category.

**Results**: Bulawayo had the highest occurrence of cystic echinococcosis (1.359%, 95% CI, 1.254-1.412), followed by Matabeleland South (0.914%, 95% CI, 0.886-0.929) and then Matabeleland North (0.848%, 95% CI 0.818-0.863) provinces. The Bulilima, Bulawayo, and Bubi districts had the highest occurrences of cystic echinococcosis at 1.749%, 1.358%, and 1.286%, respectively. The lung was the most frequently affected organ (n = 7155; at 0.854%; and 95% CI, 0.8334-0.874%, followed by the liver (0.053%; 95% CI, 0.048-0.058%). The total direct economic loss due to organ condemnation during the study period was US$ 24,812.43.

**Keywords**: Bovine cystic echinococcosis; Matabeleland provinces; Occurrence; Zimbabwe