

## BEEF / PORK

### *TOXOPLASMA* IN SWINE AND CATTLE

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*Toxoplasma* can infect a wide range of warm blooded animals including humans. Infections generally occur by consuming cysts in raw or undercooked meats or by accidental ingestion of oocysts from cat feces/soil/water. Symptoms of human toxoplasmosis are generally mild but can be severe in the immunocompromised or in congenitally infected children. Consumption of undercooked pork and meat from sheep and game animals has been associated with human infections. The role of beef cattle, however, has not been fully elucidated.

We collected bovine and swine samples at slaughterhouses in the U.S. and Peru to determine the burden of *Toxoplasma* in meats produced for human consumption. Paired muscle and blood samples were collected from each animal. The presence of *Toxoplasma* was determined by PCR (b1 gene), serological testing using Western blot (WB), indirect hemagglutination (IHA), and tissue culture (TC).

Fifty bovine and 62 porcine samples from the U.S. and 200 bovine and 200 porcine samples from Peru were examined. Of the U.S. bovine samples examined, 14 (28%) were positive by WB, 6 (12%) by IHA, and 4 (8%) by PCR. Of the bovine samples from Peru, 40 (20%) were positive by WB, 9 (4.5%) by IHA, and 1 (0.5%) by PCR. Of the U.S. porcine samples examined, 11 (17.7%) were positive by WB, 7 (11.3%) by IHA, 10 (16.1%) by PCR, and 1 (1.6%) by TC. Of the porcine samples examined from Peru, 6 (3%) were positive by WB and 2 (1%) by agglutination. None of these samples were positive by PCR. Tissue culture attempts were successful in one U.S. porcine sample (1.6%). Serology suggests that cattle and swine are frequently exposed to, or infected with *Toxoplasma*, both in the U.S. and Peru. The isolation and culture of parasites from a U.S. porcine sample confirms its domestic foodborne potential. Overall, these findings emphasize the need for additional surveillance studies of meats for human consumption, and continuous programs to educate consumers as well as handlers of these products.

