
LETTERS TO THE EDITOR

Are Cattle Significant Reservoirs of *Coxiella*?

Dear Sir:

We are writing to take issue with several of the conclusions and implications in the recent review article on Q fever in the CJVR (Lang GH. Q fever: An emerging public health concern in Canada. *Can J Vet Res* 1989; 53: 1-6). Many of the conclusions reached in the paper are unsubstantiated or over-interpreted, and we believe that the status of *Coxiella* in Canada is not presented realistically.

We believe that the Abstract of the article is misleading and could lead to grave concern on the part of the uninformed. The main reason that "Q fever in humans and coxiellosis in livestock are on the increase in Canada" is that detection methods have improved and more humans and animals are being tested. In his review, Dr. Lang did not document an actual increase in prevalence of either condition, and his conclusion is unwarranted. Similarly, "Increasing animal concentration resulting from the industrialization of agriculture and oversight of the infection in livestock permitted the extension of the zoonotic problem on the farms" is unsubstantiated. The concluding statement that coxiellosis must be controlled is a fine motherhood statement, but to say that this must be done in order to protect "the general population residing in coxiella threatened environments" seems rather alarmist to us.

Cattle are presented, without supporting evidence, as the major reservoirs for *Coxiella* and the greatest threats to human health, and Dr. Lang encourages large-scale serological testing of cattle to monitor their *Coxiella* status. If infection in cattle in Ontario is as rampant as indicated by Dr. Lang, and cattle are such a threat to human health, then why have more human infections been related to contact with infected sheep or goats

rather than with cattle (1)? The statement that "A sharp increase in the prevalence of coxiellosis was noted in Ontario dairy cattle between 1964 and 1984" is inaccurate; the text and Table II compare results from different tests to reach this conclusion (the 1964 study reported results of CA and CF tests, but the 1984 study reported results of the ELISA). Dr. Lang himself states that "the ELISA and immunofluorescence tests for coxiella antibodies are far superior in reliability and sensitivity to the traditional CF and microagglutination tests . . .", but then goes on to directly compare seroprevalence rates determined by different and incomparable techniques.

Proof is not provided for the statement that "... reactor rates indicate that cattle, particularly dairy cows appear to assure the large-scale survival of coxiellas, . . ." Dr. Lang proceeds to alarm the reader that dairy cattle are polluting the environment with *C. burnetii*. Such statements are potentially very damaging to the dairy industry, and should not be made unless based on fact.

The use of the term "coxiellosis" appears to be inaccurate throughout the review. Although not specifically defined by Dr. Lang, we believe that most readers would assume that coxiellosis is the *disease* caused by infection with *Coxiella*. In most of the instances in which Dr. Lang uses this term, he is referring to studies of seroprevalence of antibodies to *Coxiella*; the disease "coxiellosis" was not diagnosed, and hence the term is used inappropriately. To quote from one of many available sources: "Infectious disease does not inevitably follow exposure to pathogenic organisms; many other conditions need to be satisfied before disease ensues" (2). As an example, about 50% of adult humans in Ontario have titers to *Toxoplasma*, but the disease "toxoplasmosis" is uncommon (3).

Dr. Lang's recommendation of increased serological testing of cattle is at odds with authorities in Ontario: "As the incidence of human cases related to contact with either bovines or their products (7/89 or 8%) during the past 5 years (1982-86) is relatively low, a "Coxiella-free" herd-testing program in Ontario would not appear to be warranted. The species at greatest risk of spreading the disease may be sheep and goats"(1). (This reference was absent from the cited literature.)

In summary, we believe that this review article is flawed by its content of unsubstantiated opinion. Labelling of these personal opinions as a review could be misleading to many readers.

Yours very truly,
Tony van Dreumel, DVM MSc
Gary Thomson, DVM MSc
Veterinary Laboratory Services
Branch,
Guelph Laboratory,
Box 3612, Guelph, Ontario N1H 6R8

REFERENCES

1. **LEBER C.** Q fever in Ontario, 1982-1986. Ontario Disease Surveillance Report 1987; 8: 476-479.
2. **McCORMICK J.** The multifactorial aetiology of coronary heart disease: A dangerous delusion. *Perspect Biol Med* 1988; 32: 103-108.
3. **TIZARD IR, CHAUHAN SS, LAI CH.** Prevalence and epidemiology of toxoplasmosis in Ontario. *J Hyg Camb* 1977; 78: 275-282.

Authors' Response

Dear Sir:

The issues raised in the above letter are semantic rather than factual. It is postulated, without any substantiation, that "*the main reason that Q fever in humans and coxiellosis in livestock are on the increase in Canada is that detection methods have improved and more humans and animals are being tested*". Obviously,