

Bovine Tuberculosis

In 1882, Robert Koch, a medical practitioner in Germany, isolated an organism he called “tubercle bacillus”. Koch’s proof that this organism was the causative agent of what we know as tuberculosis is the basis for all modern causal associations. Although the organism that causes tuberculosis in cattle (*Mycobacterium bovis*) was found to differ from that in people (*M. tuberculosis*), it still causes serious disease in people. In an attempt to devise a cure for human tuberculosis, Koch produced a sterile filtrate of the tubercle bacillus culture. Unfortunately there was no therapeutic effect from the tuberculin; instead it became a tool to diagnose tuberculosis in animals and humans.

Tuberculin testing in 1906 of milking herds in widely separated parts of Victoria indicated that about 9% of animals were infected. In 1938 results of the first large-scale tuberculin testing of herds supplying milk to Sydney indicated 6.2% positive cows from nearly 30 000 tested.

Concurrent British studies indicated that in the human population only 5% of tuberculosis deaths could be attributed to the bovine organism, but in young children drinking contaminated milk the figure was 30%. In 1930 an Australian report concluded that “for all practical purposes the source of infection is infected milk” and that the risk mainly occurs in infancy.

Thus early control efforts focused on dairy cattle with recommended measures involving the inspection of dairy farms and condemnation of animals diagnosed to be suffering from the disease. In 1935 Victoria launched a TB-free herd accreditation scheme that operated successfully for the next 50 years. A similar scheme had been introduced 10 years earlier in NSW. Surprisingly, complete pasteurisation of all milk in Australia was slow in coming. Pasteurisation of milk sold for home consumption was not made compulsory until after World War II.

After the World War II test-and slaughter programs in all States with compensation paid for the animals slaughtered greatly reduced the prevalence of disease. A national eradication campaign commenced in 1970, based on the tracing of any cattle found to be infected at slaughter, quarantine of infected herds, tuberculin testing of cattle, and slaughter of positive reactors. From its commencement until 1993, the eradication campaign cost a total of over \$750 million. A major part of this sum supported additional measures such as a mustering subsidy and freighting rebates to assist the northern cattle industry.

Impending freedom from tuberculosis in Australia was achieved progressively by area: Tasmania (January 1963); New South Wales, Victoria, South Australia and the Australian Capital Territory (January 1988); Queensland (January 1990); and Western Australia and the Northern Territory (December 1992). National 'impending freedom' from bovine TB was declared on 31 December 1992. A further five years of monitoring were required before Australia could be declared free of bovine tuberculosis on Wednesday December 31, 1997.

Further reading

Butcher B. *Of Vets, Viruses and Vaccines: The story of CSIRO's Animal Health Research Laboratory, Parkville*. Melbourne. 2000.

Lehane R. *Beating the Odds in a Big Country: the Eradication of Bovine Brucellosis and Tuberculosis in Australia*. Melbourne. 1996

Newton LG. *Clearing a Continent: the Eradication of Bovine Pleuropneumonia from Australia*. Melbourne. 2000

Seddon HR (revised by HE Albiston). *Diseases of Domestic Animals in Australia. Bacterial Diseases*. Volume 1 & 11. Commonwealth of Australia. 1965

C Bunn
August 2002