

Question taken on notice for *Inquiry into the Impact of Animal Rights Activism on Victorian Agriculture*.

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Question: "How many of the biosecurity risks, to your knowledge, that are to public health are specific to animal agriculture?"

Response: Briefly, seven: anthrax, cryptosporidiosis, leptospirosis, listeriosis, Q-fever, salmonella, and streptococcus suis.

Details

I take "biosecurity risks to public health" to mean *diseases that may significantly affect human health in Victoria*, and "specific to animal agriculture" to mean *predominantly due to or amplified by animal agriculture*.

I refer the committee to the following web content hosted by Agriculture Victoria (AgVic)¹. AgVic lists 23 zoonoses, comprising

- 14 diseases caused by bacteria;
- 3 diseases caused by protozoa;
- 1 disease caused by fungi;
- 2 diseases caused by parasites; and
- 3 diseases caused by viruses.

Of these, to my knowledge, seven diseases are predominantly due to or predominantly amplified by animal agriculture in Victoria. Details are below. Rather than copy exhaustively from the available content, I've selected only those diseases that are predominantly due to or predominantly amplified by animal agriculture to my knowledge and extracted enough information to explain the inclusion.

Anthrax: Almost all cases of human anthrax can be directly linked to contact with infected animals, particularly cattle, or indirectly through contact with heavily contaminated soil. Most at risk are people working with carcasses especially animals that died suddenly - for example knackery workers, farmers and veterinarians.

Cryptosporidiosis is caused by a protozoan that is carried in the gut of a number of livestock species including calves, lambs, goats and deer. It is shed in faeces and transmitted to humans either through direct contact with dung or via contaminated drinking water.

Leptospirosis is a bacterial disease spread by the inhalation of organisms in aerosolised urine droplets, or by direct exposure to the organism from the urine of infected animals.

¹ <http://agriculture.vic.gov.au/agriculture/pests-diseases-and-weeds/animal-diseases/zoonoses/zoonoses-animal-diseases-that-may-also-affect-humans>

The people at highest risk for this disease include dairy farmers, piggery workers and stock transporters, but any person handling livestock or native wildlife is at risk.

Listeriosis: *Listeria monocytogenes* is most commonly associated with clinical disease in ruminants including encephalitis, abortion, septicaemia and mastitis. It is transmitted through the ingestion of contaminated feed, often silage. It can also be transmitted through the upper respiratory tract mucosa, conjunctiva and wounds. Listeriosis in humans is predominantly a food borne disease that is associated with soft cheeses, vegetables, meats and milk.

Q-fever is a disease caused by an organism named *Coxiella burnetii*. The clinical signs of this disease in humans range from no noticeable signs, to a severe flu like syndrome that may last for months. It is spread by inhalation of the organism from the placental fluids and urine of sheep, goats, cattle and native animals (i.e. bandicoots, wallabies etc.). Affected animals appear normal. The people most at risk of contracting this disease are abattoir workers (particularly those dealing with foetuses), veterinarians, shearers and farm workers.

Salmonella sp. are bacteria that live in the intestinal tract of carrier animals of many species including livestock, poultry and reptiles. Infective numbers of the bacteria are shed into the faeces of these animals particularly during periods of stress such as being yarded and transported.

Streptococcus suis is a bacterial infection carried by pigs that may be apparently healthy. Humans are infected most often through skin wounds or rarely by inhalation. The disease caused can include meningitis and be fatal.

Other significant zoonotic diseases listed within the linked content, such as brucellosis, *E. coli*, tuberculosis, yersiniosis, and Hendra, were excluded because there is no evidence of their presence in Victoria.