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Epidemiology of tularemia in Finland

Tularemia, also known as rabbit fever, is a zoonosis caused by the bacterium *Francisella tularensis* and found in the Northern Hemisphere. The incidence of tularemia in Finland is the highest in Europe. We have in our country on a regular basis highly localised and primarily mosquito-borne outbreaks of tularemia with hundreds, and even up to thousands of people becoming infected. The outbreaks are usually restricted to a few localities in Northern and Southern Ostrobothnia and Central Finland, but can occur in different places in different years. Tularemia epidemics occur particularly in years following vole population peaks. In other words, not only is the occurrence of tularemia localised, but it is also cyclic, and the cycles are assumed to be related to variations in rodent populations. This phenomenon is explained by the bacteria multiplying effectively in a rodent population, and spreading in the droppings of the animals into the environment, ending up in water and in the mosquitoes developing in it.

In Finland and Sweden, by far the majority of infections are caused by mosquito bites. However, epidemics in which a considerable proportion of the cases are linked to agriculture and respiratory transmission have been reported in several countries, including Finland and Sweden. The pulmonary form of tularemia has been established to have a strong causal relationship with exposure to hay dust. Agricultural activities, such as hay harvesting, may produce dust that contains the bacteria, and thus create a significant risk factor for the pulmonary form of tularemia. The symptoms of tularemia depend on the route of infection; infections resulting from respiratory exposure, in particular, are associated with severe symptoms. In short, the bacterium *F. tularensis* multiplies in rodents and spreads through mosquito bites.