



Climate and livestock diseases

Climate changes can result in increased incidence of new diseases in our livestock and wild animals. Some of these diseases can be transmitted to humans with very serious consequences.

Diseases not dependent on climate

Diseases that have existed in Northern Europe before and which infect directly from animal to animal, such as foot-and-mouth disease and classic swine fever, are not dependent on the climate and a warmer climate is not expected to result in a greater risk from them.

New livestock diseases

On the other hand, it is expected that many diseases with a more complicated infection cycle can be a greater threat to livestock production or to human health. This greater threat arises because the disease needs a carrier, such as an insect or a tick, if it is to be transmitted. A warmer climate can result in the carrier becoming more widespread or that the carrier population grows.

Bluetongue is an example of a new disease that has become a problem in Denmark. Bluetongue attacks cattle and other ruminants (but not humans) and is transmitted by small, biting insects: midges. The only effective way to stop the disease is vaccination, but a vaccine against the type of bluetongue that was found in Northern Europe was not marketed until 2008. Only then was it possible to stop the spread of the disease.

Apart from bluetongue, the following diseases can threaten the health of livestock or humans in Northern Europe in the future:

African horse sickness

African horse sickness is a viral disease that is very serious and fatal for horses. The disease does not attack humans. It is probably transmitted by the same midge that transmits bluetongue. The disease occurs in e.g. the Middle East and North Africa. Spain and Portugal had a number of outbreaks of the disease in 1987–1990. It is fought with vaccinations. This disease is so serious for horses that it is self-limiting to a certain degree, because a horse that is infected is often dead before it can transmit the virus.

West Nile fever

West Nile fever is a viral disease that is normally part of the infection cycle between wild birds and various mosquitoes. However, the disease can attack horses and humans and can give serious neurological symptoms. In humans, about 1% of infected persons show signs of the infection and only a few have serious, possibly fatal, neurological symptoms. The disease is known in the USA, where it spread to large areas of the country in a short space of time. In Europe there were cases in 2008 in Italy, Austria, the Czech Republic, Rumania and Slovakia, and the disease seems to be travelling northwards. It can be spread by migrating birds.

Leishmaniasis

Leishmaniasis is a disease caused by a single-celled organism and is transmitted by sand flies. Sand flies are found in Southern Europe, where Leishmaniasis is also widespread. This disease primarily affects humans and dogs, but other animals can also be affected. In humans, the disease can take several forms, including the serious kalaazar condition, which attacks the inner organs. Leishmaniasis is found in Southern Europe up to Southern Germany. The disease is apparently moving slowly northwards, as sand flies become more widespread with rising temperatures.

Rift Valley fever

Rift Valley fever is a serious viral disease that is transmitted by various mosquitoes. It attacks livestock such as cattle, sheep and goats, but it can also be a serious disease for humans. The disease occurs in Africa south of the Sahara, but seems to be moving northwards and there has been a large outbreak in Egypt. There is a certain risk that infected mosquitoes can travel with the winds across the Mediterranean Sea to Italy, where there are mosquitoes that can transmit the disease further. The disease is fought with vaccination.



**The Danish Ministry of Food,
Agriculture and Fisheries**

Slotsholmsgade 12
DK-1216 Copenhagen K
Tel: + 45 33 92 33 01
fvm@fvm.dk
www.fvm.dk/english