

News from Europe

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News from Sweden

In the end of June, the Nordic Section of the WDA held its biennial meeting in Longyearbyen on Svalbard, (lat 78° N). The veterinarians at the Wildlife Section of the National Veterinary Institute (SVA) all attended this event and experienced a great conference, spectacular scenery and were able to spot lots of arctic wildlife. A special thank you to Knut Madslie at the National Veterinary Institute in Oslo, Norway, for all the excellent organizing work! Several interesting topics were discussed and presented, including wildlife rehabilitation in Sweden, toxoplasmosis in Norwegian reindeer, vector-borne diseases in Afghanistan and the annual wildlife disease reports from the Nordic countries.

In Sweden, the “wildlife disease summer” has been similar to the summer of 2006 with local abnormally high mortalities in seabirds (presumed to be botulism), the occasional emaciated moose (similar to the moose wasting syndrome of the eighties), and the usual traffic incidents with some of our large carnivores including wolves, brown bears and lynx. A new wildlife disease surveillance network has been initiated by SVA and the Swedish Association for Hunting and Wildlife Management, called “the Coastal Network”, which is up and running since February this year. With this network, the monitoring and surveillance of wildlife diseases and mortality along the Swedish coastline has been made possible by the help of local coordinators. These coordinators have their own network of fishermen, hunters and people living in coastal areas that, through the coordinators, report any signs of increased mortality or disease, to SVA. Through the help of the Coastal Network, some interesting observations have been reported such as a lower than normal reproductive success in common eiders and mute swans, and the first reported observation of European beaver (*Castor fiber*) in saltwater on the West coast of Sweden.

Current research projects in wildlife diseases in Sweden include alopecia in moose (together with our colleagues in Norway), anaplasmosis in moose, toxoplasmosis in moose and roe deer, nematodes in brown bear, chytridiomycosis in frogs, intestinal parasites in fallow and roe deer, presence of *Brachyspira* sp. and *Campylobacter* sp. in brown bear, chronic wasting disease surveillance in free-ranging cervids, and continued studies on botulism in seabirds. At the same time, the routine work goes on as usual, and by mid-July this year, 1 000 wild animals and samples from wild animals have been examined.

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Hantaviruses in Europe.

In the *Bunyaviridae* family, the genus Hantavirus comprises the etiological agents of haemorrhagic fever with renal syndrome (HFRS). HFRS is a disease characterised by fever, headache, gastrointestinal symptoms and renal dysfunction, and the more severe forms with haemorrhagic manifestations occur in Europe and Asia.⁽¹⁾ The mildest form of HFRS, Nephropathia epidemica (NE), is caused by infection with Puumala (PUUV) hantavirus, the serotype present in most countries of North-Western Europe. Dobrava hantavirus (DOBV) is the cause for human cases in Eastern Europe and the Balkan region. DOBV infection causes severe HFRS with a reported mortality rate of up to 20%⁽²⁾. Besides PUUV and DOBV, also Tula (TULV), Saaremaa (SAAV) and Seoul (SEOV) viruses circulate in Europe; and these serotypes have also been described as human pathogens.

Transmission of the viruses to man occurs through inhalation of infected animal excreta, i.e. urine, faeces and saliva. The epidemiology of hantaviruses is closely linked to the ecology of their principal hosts. The bank vole (*Myodes glareolus*) is the main reservoir for PUUV, while the yellow-necked mouse (*Apodemus flavicollis*), the common vole (*Microtus arvalis*), the striped field mouse (*Apodemus agrarius*) and the brown rat (*Rattus norvegicus*) carry and transmit respectively DOBV, TULV, SAAV and SEOV.

In Western Europe, outbreaks of hantavirus infections in humans have been described in 1985, 1990, 1993, 1996, 1999, 2001 (Belgium only), 2003, 2005 and 2006. Most cases occur between March and November with a peak from August to September. A report describing the hantavirus situation in Belgium, France, The Netherlands, the Grand duchy of Luxembourg and Germany appeared recently in Eurosurveillance Monthly⁽³⁾. Increased hantavirus activity, or so-called epidemic years, occur geographically, temporally and spatially in different locations in the European Union (EU) and adjacent countries. A recent survey performed by the European Network for diagnostics of Imported Viral Diseases (ENIVD) showed that over 35,000 confirmed cases were detected in the EU since 1990 (P. Heyman and A. Vaheri, pers. comm.). It should be noted however that, in the case of PUUV infections, only 5-10% of the infected people also show clinical illness, the number of recorded cases thus has to be multiplied by 10 or 20 in order to get an idea of the number of people actually infected. In Europe, the antibody seroprevalence for PUUV ranges from 1% up to 20% (in some hyperendemic areas in Scandinavia). In Western Europe a seroprevalence of between 1 and 2% in the normal population is seen. Of all European cases, about 70% were reported from Scandinavia, mainly by Finland where between 1,000 and 3,000 cases occur each year; no cases were reported from Spain, Italy, Malta and Cyprus.

Periods of increased hantavirus activity occur in cycles and are closely linked to the population density dynamics of the carrier rodents. In the boreal temperate forest (taiga) of Northern Europe, true cyclic rodent population dynamics with short, seasonal peaks occur and are mainly based on a predator-prey mechanism. In the mid-European temperate deciduous broad-leaved forest zone, more stable rodent population dynamics occur, with basically tree mast-driven peaks. The impact of masting on rodent populations in this biome evidently correlates with the presence of particular tree species, i.e. *Quercus robur*/*Q. petraea* and *Fagus sylvatica*. The greater the biomass of these species present, the more significant the mast effect on rodent populations.

There is a tendency for periods with increased hantavirus activity to occur more frequently, and during these episodes more humans tend to be infected. Climatic and environmental changes probably play an important role here. Belgium had a three-year epidemic cycle up to the year 1999 (with epidemics recorded in 1990, 1993, 1996, 1999), from then until 2005 the epidemics occurred bi-annually (1999,

2001, 2003, 2005). The year 2005 was the most important epidemic (372 cases) ever recorded in Belgium but also the following year, 2006, was an epidemic year with 163 cases and 2007, with 138 cases recorded up to end of June, announced itself as the third consecutive epidemic year in a row ⁽⁴⁾.

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European Section

Material for publication in News from Europe can include recent wildlife disease outbreaks and new diseases in Europe, short case and meeting reports; job and scholarship announcements. We encourage submissions, and will help with the English language, if required. The deadline for the next issue is October 2007.

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