

Schmallenberg Virus A FULL UPDATE

Schmallenberg Virus has now appeared in England, on 4 farms, 2 in Norfolk, one in Suffolk and 1 in East Sussex. In each case the disease has been diagnosed as a result of investigation of deformed lambs.

Since the disease was first reported in early December our understanding of the disease has become considerably greater, though still with important gaps.

The disease in cattle usually starts as a diarrhoea with fever, a temperature rise of up to 3 degrees above normal, accompanied by a reduction in milk yield. In other species this viraemic stage of the disease passes unnoticed or virtually so. Affected adult cattle recover quickly, but the economic cost of the disease comes in the form of deformed offspring.

WHAT ARE THESE DEFORMITIES?

If the dam is infected in the first third of pregnancy, then the foetus is likely to have severe brain damage with hydrocephalus and cerebellar hypoplasia. Dams infected in the middle third of pregnancy, tend to give birth to offspring with limb deformities, and those infected in late pregnancy seem to produce offspring which are affected by an encephalitis which leads to ataxia, recumbency, inability to suck, and sometimes fits.

The lesions reported so far appear to indicate that the dams were infected in early or mid pregnancy, though the effect of infection at different times into gestation is subject to considerable overlap.

HOW IS IT SPREAD?

SBV, like other members of the Orthobunya Virus group is almost certainly largely spread by biting insects, probably various species of midge. However direct transmission may well also happen. The period while the infected animal is viraemic is unusually short at 2 to 4 days, but during this time, it seems that midges pick up disease very easily when biting infected hosts, much more easily than is the case with Bluetongue. Similarly, when an infected midge bites a susceptible animal, then the virus will almost certainly infect that animal.

WHERE IS IT IN EUROPE AND HOW HAS IT GOT HERE?

The disease is quite widely distributed in the west of Germany, throughout Holland, and in parts of Belgium. New suspect cases are being reported at about 10 a day, but as Holland have made the reporting of the birth of deformed ruminants notifiable, some of these will be due to other causes. The latest figures for CONFIRMED cases are, by premises affected, Cattle 22 (Germany 22, Holland 2). Sheep 95, (Holland 64, Belgium 27, UK 4). and goats 4 (Holland and Belgium 2 each). Bear in mind that there is a backlog of animals under investigation at present. It is also likely that once a blood test is found, then those figures will rise dramatically.

It is being assumed that the Virus has reached Eastern England via wind borne midges. There were according to Met Office data 4 to 8 days in August to Mid October when midges could have been blown across the channel in the way a plume of them did when BTV was "Flown" over the North Sea.

About 4600 susceptible animals have been imported to the UK from the area of the EU affected by SBV. Of those, most were cattle which have been settled in about 200 units spread widely across the UK. It should be born in mind that a lot of these animals are yet to calve, and therefore could be a threat, particularly if they calve after the end of April or so when midges become active again.

WILL SBV SURVIVE THE WINTER?

Probably yes, but we cannot be certain. The virus soon becomes undetectable in the bloodstream of the infected female animal, but appears to localise in foetal tissue. It has been easy to detect it by PCR in deformed sheep and goat foetuses, but less so in calves. Most of the tests to date have been by PCR, which detects viral RNA, which does not prove that the virus is alive and capable of causing infection. What we therefore do not know is how many actively infectious offspring will be born in the spring, and therefore it is difficult to know just how much infection will be out there in the UK come the spring. We shall be able to find out a lot more when we have a blood test for antibody, which will tell us much more accurately just how many animals have been infected.

WHEN WILL WE HAVE A BLOOD TEST?

Possibly quite soon. Favourite test to become available first is a fluorescent antibody test which is being trialled in Germany. It is expected to give false positive results. Early use of it has suggested infection of almost 100% in some small groups of animal. A Serum Neutralisation test is also under development, and may be more

accurate. The major step forward in producing a reliable blood test has been that the virus has now been properly isolated.

IS SBV NOTIFIABLE?

No, BUT REPORTING SUSPICIOUS CASES IS ENCOURAGED. If you have born on your premises, deformed lambs kids or calves, AHVLA would like to know. If the animal is to be investigated for SBV with nothing else being looked for, then that examination will be free of charge in England and Wales. In Scotland, investigation for SBV is currently only being carried out as part of a full post mortem at the normal charging rates.

WHAT ABOUT RESTRAINT OF TRADE?

SBV is not notifiable, and is currently not considered in the EU to be likely to be a problem to the extent that BTV was. Banning livestock movement is therefore considered to be disproportionate to any likely benefit. However some countries may take a different view, and Russia are banning the import of meat products from infected areas of mainland Europe, so we anticipate that the ban will now be applied to England, and quite probably Scotland and Wales as well. The way in which it has spread so far already suggests that this virus will not be controlled by stopping livestock movement.

WILL THERE BE SURVEILLANCE?

There is no statutory need for active surveillance for SBV at present. However the BVA group are assuming that at least some of the cattle imported recently from the infected area, will be blood tested. It was suggested that it might be prudent to blood sample these animals now rather than wait for tests to become available, as we do not know the duration for which antibody remains detectable.

WHEN WILL WE KNOW HOW MUCH EFFECT SBV WILL HAVE ON FARM LIVESTOCK ECONOMICS?

At the moment, we are in the first round of calving/ lambing/ kidding since the discovery of this new virus. We do not yet know what the final figures for deformed offspring caused by SBV will be. Reports from Europe mention non viable offspring rates of anything from 2.5% to 50%, but that is before the end of the lambing/calving/kidding season. We do not then know how efficiently or otherwise the virus will survive this winter. We assume that we will see probably quite a few more cases in the UK in the coming weeks now that we know it is here, but the real impact will be known until June 2013. By then it will have reached its likely peak.

If Akabane, which is closely related, is anything to go by, it causes a considerable loss through abortions when it gets into a new area, but subsequently, things rapidly die down to a steady and fairly low level. If the immunity resulting from the infection is long lasting, then after the first two years or so, virus could well circulate around maiden animals, which would be protected by naturally acquired immunity, usually before they became pregnant. Thus subsequent levels of deformity etc in offspring would be there, but low. At the other end of possible scenarios, natural immunity will be short lived and we shall need a vaccine to control it.

IF IT COMES TO THAT, WHEN WILL WE HAVE A VACCINE?

Probably about 2 years from now if there are no unexpected glitches in the research needed!.

DOES IT AFFECT HUMANS?

Almost certainly no, but pregnant ladies should keep away from sheep and goats at lambing/kidding for other reasons anyway!!

In fact although several members of the group of viruses including SBV can affect Humans, the ability to so is thought to be due to a gene sequence which is not present in SBV.

The message overall is still BE AWARE, and discuss anything suspicious with your local Animal Health Office.. Also PLEASE BE AWARE that all of us are on a steep learning curve. We will keep you abreast of developments and thinking, even if at times that may involve what might look suspiciously like a U-turn!!.

Nick Clayton. Jan 24th 2012
Secretary, Goat Veterinary Society.