



Schmallenberg disease surveillance programme

Background

In August 2011, there were early reports of an unknown disease that was observed in dairy cows in North Rhine-Westphalia (Germany) and in the Netherlands. Clinical signs associated with the disease were non-specific, and included fever, inappetance, diarrhoea and decreased milk production in dairy cows. Lambs were born early that winter showing different degrees of malformation, with calves showing similar malformations born subsequently.

Comprehensive investigations performed at the Federal Research Institute for Animal Health in Germany revealed that the disease was caused by a new virus belonging to the family of orthobunyaviruses.

The virus was first found in a pooled blood sample obtained from three sick cows from a dairy farm near the German town of Schmallenberg in North Rhine-Westphalia, and as a result the new virus was named “Schmallenberg virus”. The name is sometimes abbreviated to SBV. Schmallenberg virus infects domestic ruminant livestock including sheep, goats and cattle. It does not affect humans. While it is generally considered to be a disease of low economic impact it has been known to cause substantial economic losses in some affected herds.

Since its first detection, the virus quickly spread all over Europe. It was first diagnosed in Ireland in October 2012, following the birth of a deformed calf. The infection was confirmed in a further 48 cattle herds and 39 sheep flocks, predominately in the south east of the country.

The disease seemed to disappear from Ireland after May 2013, but it re-emerged in 2016. Waning population level immunity is thought to have facilitated its re-emergence and it is likely that the disease incidence will ebb and flow in the future.

Legislation

The disease is neither OIE listed nor notifiable. Accordingly, it is not subject to EU or Irish legislation, nor to OIE recommendations on surveillance. Therefore surveillance has been undertaken as deemed necessary and/or useful by the Irish Department of Agriculture, Food and the Marine (DAFM).



Test results

Following the early laboratory cases detected in Ireland, national serological surveys were undertaken which confirmed that exposure to the disease was confined to the south and east of the country. The disease incidence appeared to decline to zero between 2013 and 2015, and testing of sentinel herds and of midges trapped at different sites supported the view that the virus was no longer circulating.

In late 2016, samples submitted from sentinel farms **and** samples submitted for confirmatory testing for BVD virus (and opportunistically tested for Schmallenberg) yielded positive SBV test results. A national survey was carried out to ascertain the prevalence and extent of spread since the re-emergence of the virus. The target population was under thirty month old cattle slaughtered at Irish abattoirs. Sampling took place in the last week of January 2017. The age limit was carefully chosen so that only cattle which could not have been exposed to SBV during the previous period of virus spread in 2012/2013 were sampled. 1210 cattle were tested, with 686 testing positive. When the characteristics of the test were taken into account, the true national prevalence was estimated at 57.6%. The study also showed that the disease had spread into 22 out of 26 counties in Ireland by the end of the 2016 vector season. Please see Figure 1 below.

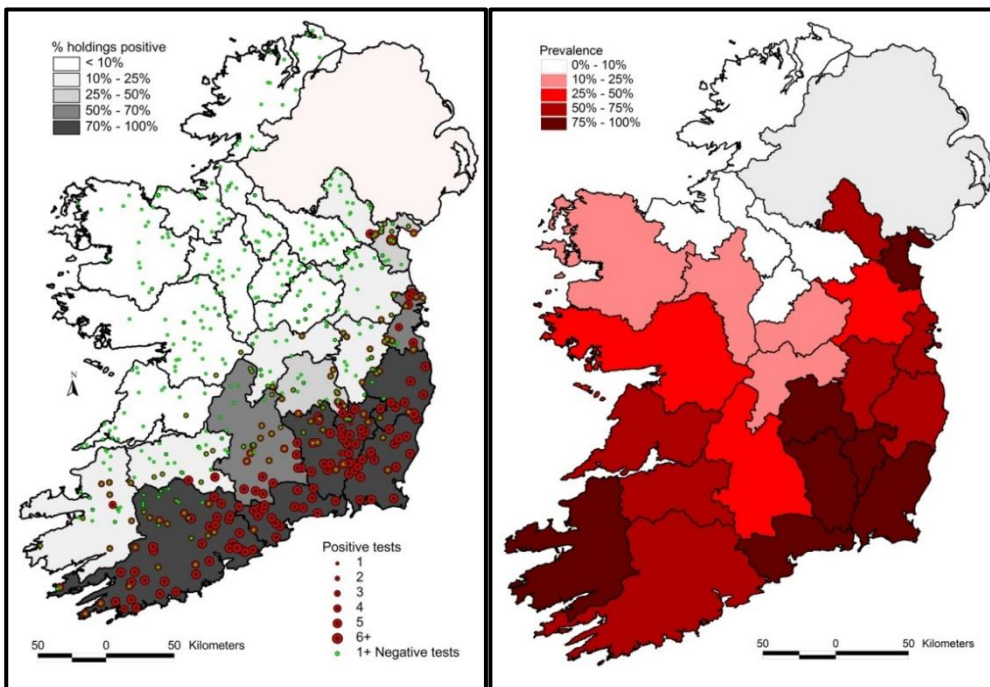


Figure 1: A comparison of Schmallenberg distribution by herd following emergence in 2012 (left) and Schmallenberg prevalence by county following the 2016 vector season (right).



Passive surveillance

It should be noted that the active surveillance outlined above is supplementary to the passive surveillance which Ireland regards as its mainstay in detecting animal diseases.

DAFM operates a network of regional veterinary laboratories (RVLs), strategically located around the country. Farmers and private veterinary practitioners (PVPs) submit samples from sick animals to the laboratories every week. This service facilitates the detection, diagnosis and control of diseases of livestock, and is a crucial part of Ireland's early warning surveillance system in the detection of new and emerging diseases. The RVLs detected the first case of Schmallenberg in Ireland in 2012. The detection of SBV cases in the laboratories serves to confirm, and add to, surveillance findings from other sources. In recent years, cases were detected in the RVLs in December 2016, spring 2017 and spring 2018. No confirmed cases were recorded from July 2018 to date (February 2021). These findings suggest that circulation of the virus has fallen to low levels since the end of the 2017 vector season in October of that year. Based on previous findings here in Ireland and Europe, and based on the epidemiology of Akabane virus in Australasia, it is likely that SBV will re-emerge in future when population level immunity wanes in future as previously exposed seropositive are replaced by immunologically naïve progeny.

Farmers are encouraged to make use of their local Regional Veterinary Laboratory to aid with diagnosis of disease conditions.

Treatment, prevention and control

There is no treatment for the disease caused by the Schmallenberg virus. Vaccines have been made available to protect against the disease. For detailed advice on prevention and control, farmers are advised to contact their veterinary practitioner.