

# BVDV – NOT YET ON THE CRITICAL LIST

*Farming Business takes a look at the research into BVDV headed by Dr Joe Brownlie at the Institute for Animal Health, Compton, Berkshire.*

With an estimated 1% of the world's cattle population now infected lifelong with Bovine Virus Diarrhoea Virus (BVDV), the disease is recognised as one of the most important pathogens affecting today's beef and dairy producers. This has now been accentuated by the eradication, in most developed countries, of major diseases such as Foot and Mouth.

BVDV was first recognised in the 1940s in the USA and was soon after recorded in England and Wales, yet only recently a breakthrough has been made into the fatal form of BVDV infection called mucosal disease.

This breakthrough was made by Dr Joe Brownlie, a senior veterinary researcher, and his team at the Institute for Animal Health, Compton, Berkshire. They have, with the assistance of joint funding from the MMB and MLC, made significant progress in establishing the causes, the risks to UK cattle industry and the possible prevention of mucosal disease.

## MUCOSAL DISEASE

Cattle infected with BVDV can show a wide range of signs from a mild, short-lived fever to abortions, severe non-hereditary damage, weak newborn calves and even the fatal mucosal disease.

"Furthermore, BVDV is responsible for attacking those lymphoid tissues which are responsible for providing the animal's immunity. This increases their vulnerability to other conditions such as respiratory and intestinal diseases," comments Dr Brownlie.

BVDV can be separated into two different forms or "biotypes". The first biotype is called non-cytopathic (BVDVnc) and the second is cytopathic (BVDVc). It is the BVDVnc biotype that is responsible for infecting the unborn calf and causing congenital damage.

This virus can pass from the pregnant mother to the foetus as a result of acute infection, often from an infected bull or directly from any cow that has the persistent lifelong infection as an intruder. It is these latter animals that make up the 1% of the national herd which are persistently infected for life.

## SUPERINFECTED

Dr Brownlie and his team discovered that superinfecting these persistently infected animals with the second biotype (BVDVc) is the cause of the fatal condition, mucosal disease. In one of the outbreaks of mucosal disease that Dr Brownlie investigated, 40 out of



**Non-surgical collection of embryos that will later be washed thoroughly prior to implantation.**

60 yearling cattle died.

"These results are typical of the disease, the symptoms, including profuse diarrhoea, extensive blistering of the mouth and nose, loss of appetite and, inevitably, death. This can be fatal not only to the cattle but to the farmers livelihood," he explains.

Dr Brownlie has also investigated many outbreaks of disease around the country and considers the herds most at risk are those which are the best managed, the cleanest and that have been closed to introduction of any cattle for some years.

"These herds have no immunity to the virus and are highly susceptible. It is into such herds that a farmer may be tempted to use a sweeper bull on his heifers or bring in a particularly prized in-calf heifer. Both could introduce BVDV and worse could introduce the virus into cattle in early pregnancy. This will soon be followed by abortions, stillborn calves, damaged calves and about a year later mucosal disease. It can be a very depressing outcome.

"What worries me is the fact that few people take advantage of the perfectly adequate tests that can be carried out by their vet. Any cattle that are to be introduced into a herd should be tested either before arrival or at least held in isolation on the farm until an examination for BVDV has been carried out by a vet."

## NO VACCINE

As yet there is no vaccine on the market, however, Dr Brownlie hinted that he and his group at Compton had developed a highly effective vaccine that should be released in the UK some time next year. He also went on to say that there are proper guidelines to reduce the risks of introducing BVDV into a herd. One of which is by using AI, thus preventing contact between animals. Although it is known that the virus can contaminate semen, all reputable semen suppliers, such as Genus, ensure that their bulls are free from infection before collection.

"Presently, one of our research projects is to assess whether embryo transfer procedures