

SEVERE BHV-1 OUTBREAK IN A NAIVE DAIRY HERD IN NORTHWEST SPAIN

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2016-0030
P02-002-233

INTRODUCTION

The commercial dairy herd is located in Galicia (North West of Spain), a densely populated region with farms that average a capacity of 40 cows. This is a large herd with 400 Holstein dairy cows (250 milking) and it is engaged in a voluntary regional health program for the control and eradication of IBR, BVD, Neospora and Johne's disease since 2005. This farm has regularly vaccinated for BVD, following an every 6 months booster dose protocol, and it was considered to be free of IBR according to yearly serology control for IBR and bulk tank milk analysis followed in the region (1).

CASE DESCRIPTION

In the second half of May 2014 this farm was presented with a respiratory outbreak that was mainly affecting the adult animals. Pyrexia (40°C-40,5°C), anorexia, dyspnea, cough and nasal discharge, firstly serous and then mucopurulent, also combined with conjunctivitis and ocular discharge. One animal died and at post-mortem it was evidenced pneumonic consolidation and emphysema. Young suckling calves were also affected, and the group of calves showed the same respiratory clinical signs, and of those one 4 month old calf died few days later.

Remark that the farm was producing more than 8,000 liters of milk each day and after the starting of these respiratory symptoms, this production began to decrease in the middle of May, reaching the lowest levels in June, concurring the peak of the clinical signs detected on the herd. The milk sales dropped almost 1,000 liters per day at this time, adding the 2 liters drop milk on average per cow and the milk lost due to the treatments implemented on them (Figure 1). A similar study in the UK describes losses of 1.000 liters/cow/year in IBR seropositive cows compared to seronegative cows in the same farm (2). It means that the economic losses were very significant.

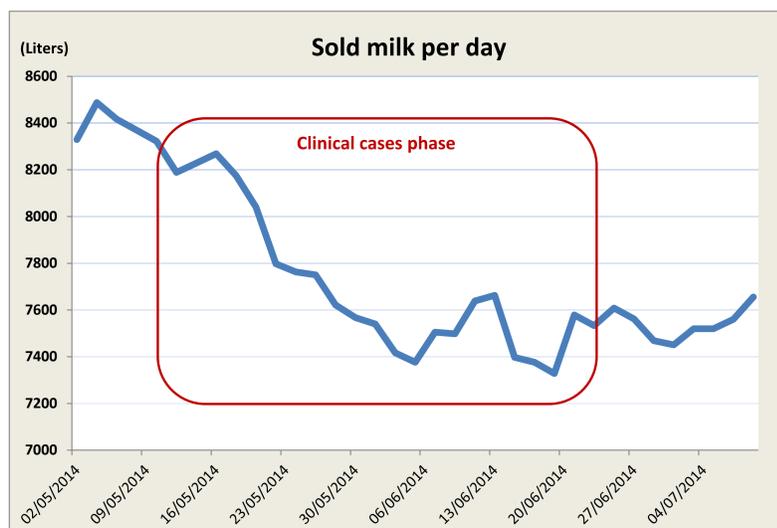


Figure 1. Evolution of milk sales

All the affected animals were first treated with nonsteroidal anti-inflammatories, marbofloxacin and ceftiofur, although little success was found. One week after the symptoms appeared it was decided to do an intranasal vaccination against BRSV and P-13 in milking animals, and 10 days later that same vaccine protocol was extended to the whole herd.

The farmer, due to the poor response to the vaccination decided then to contact the veterinarian of the regional health program.

DIAGNOSTIC TOOLS

The veterinarian did the anamnesis, farm inspection and clinical examination and she finally suspected of an IBR outbreak as the main cause of the problem. She then took some nasal swabs for virus detection (IBR, BRSV, BVD) by PCR (Boviresp[®], Hipra) (3). This analysis came back as positive for IBR (Diagnos report n°: A00055386) and later it was evidenced IBR seroconversion in blood samples from 12 to 24 months old heifers (Figure 2) and also in milk samples from the bulk tank, coming back positive, having been negative the previous years (Figure 3).

ELISA IBR gE. Individual samples heifers (12 - 24 months)			
Sampling date	Number of heifers	Positive	Prevalence
jan-14	14	0	0%
jan-15	12	6	50%
jan-16	12	0	0%

Figure 2. Blood sampling serology results in heifers

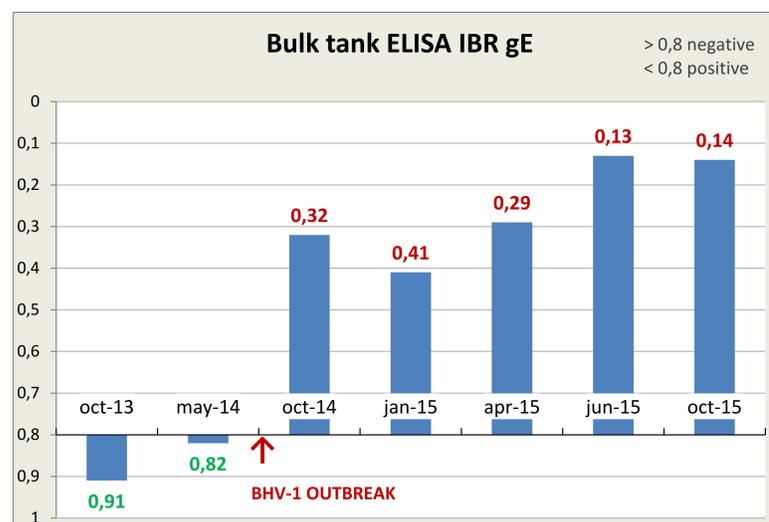


Figure 3. Evolution of the bulk milk tank serology results

IMPLEMENTED MEASURES AND RESULTS

In front of the evidence of the lab results obtained the veterinarian decided the introduction of an MLV IBR marker vaccine doubly gE-/tk- deleted (HIPRABOVIS[®] IBR Marker Live, Hipra) to the whole herd. The symptoms then began to decrease just 48h after vaccination, no more animals became sick after the introduction of the vaccine and the milk production started to increase again, however it took long time to regain the levels achieved before the outbreak, this fact remarks the severity of the outbreak and its negative economic impact on the farm.

COMMENTS

Currently this herd is on a six monthly program with HIPRABOVIS[®] IBR Marker Live protocol for the prevention of IBR, with a double primo-vaccination in the young heifer calves at 3 months of age and booster vaccinations in the adults every 6 months. The farm IBR status is regularly monitored by bulk milk tank sampling every 6 months and every 12 months by the sampling and IBR gE serology of 12-24 months old heifers. The bulk milk tank samples still being positive as it is expected due to the consequential new seropositive animals arisen owing to the outbreak. Regarding the blood sampling, 50% of these animals sampled came back IBR positive six months after the outbreak as a consequence of its infection during this period, when they were younger calves, but no new young heifers appeared positive afterwards. No more clinical cases of IBR have been detected and the epidemiologic situation of IBR is now under control.

REFERENCES

- (1) DOG N°45 de 6/3/2014 (Pags 9604-9657)
- (2) Reduction in daily milk yield associated with subclinical Bovine Herpesvirus 1 infection. J.M.E. Stalham, I.V. Randall, S.C. Archer (2015). Veterinary record, 177 (13): 339-342
- (3) Detection of Infectious Bovine Rhinotracheitis, Bovine Viral Diarrhea and Bovine Respiratory Sincitial viruses in nasal exudate from calves by real time PCR. Casademunt, S., Robles, V., Ordiz, P., Valls, L., Maldonado, J. Ruvasa Congress - Ruminants Veterinary Association of South Africa. Cape Town, South Africa. June 2015