The fate of IBR seropositive cows II

Cows found after blood testing: programme switch test unsuspected to free status

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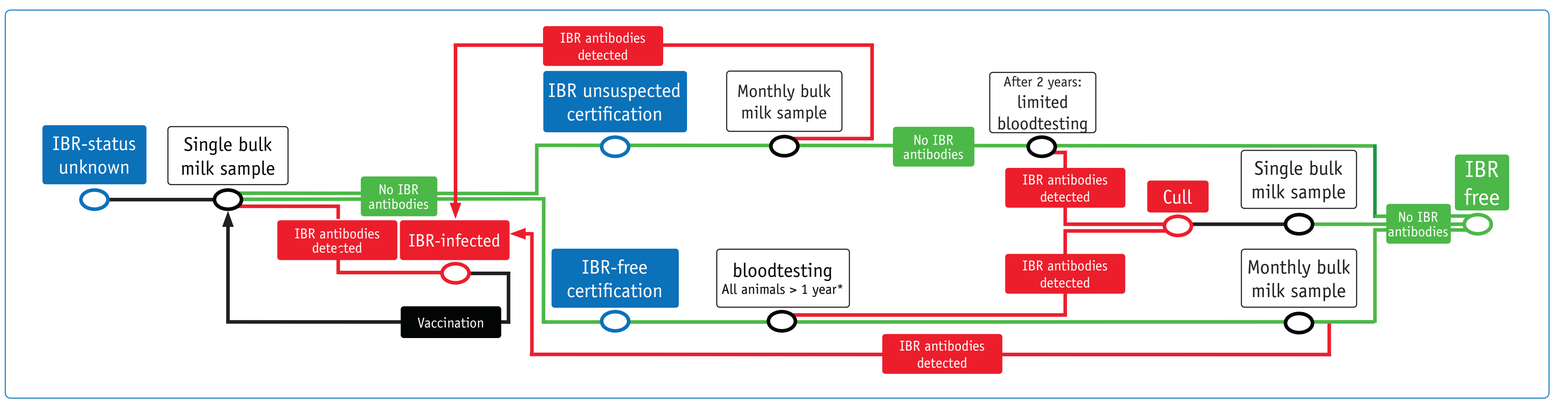
Objective of the study

When a control programme is in place, ideally every herd maximizes its possibilities to reach the goal of the cattle industry to eradicate Bovine herpesvirus 1 (BoHV1), the causative agent of Infectious Bovine Rhinotracheitis (IBR). The implicit assumption in the design of the programme was that farmers who found an antibody positive cow would sent it to slaughter. An analysis was done to trace known infected cows and look for characteristics. Are they kept? Are they traded?

Background

Since April 2018, mandatory control programmes for IBR for dairy herds were introduced by the dairy industry and are carried out by Royal GD. One of the routes to an IBR-free herd is the bulk milk route which leads to an unsuspected IBR-status, see Scheme 1. The route starts with an initial seronegative bulk milk sample, among other risk-based tools subsequent monitoring of the unsuspected status is performed by monthly bulk milk IBRgE testing. The gE-antibody test in bulk milk is negative at an estimated within-herd prevalence of less than 10%. Consequently, a small number of latently infected cows can still be present in a dairy herd with a seronegative bulk milk sample. After at least two years of IBR-unsuspected status a herd has the possibility to qualify for the IBR-free status by performing the 'programme switch test', see Scheme 2. Seropositive cows have to be culled in order to become IBR-free, failure to do so restores the status back to unsuspected. Herds that do not cull seropositive cows are advised to vaccinate the herd twice a year for IBR.

Scheme 1. Routes to IBR-free certification through gE-antibody testing in bulk milk and individual blood samples



Methods

The results of IBRgE-antibody blood testing of 219 dairy herds that switched from IBR-unsuspected to the IBR-free route were available over the first half year of 2020. For each herd the proportion of seropositive cows was determined. A total of 4,802 cows were blood tested since they were either 6 years or older or were purchased prior to the obligation to test purchased cows from non-IBR-free herds that started in 2018.

Results

In herds that switched from IBR-unsuspected to IBR-free, 185 (84%) did not find any cows with antibodies in the programme switch test. Thereby indicating that no previous infection was present in the herd and these herds did not have to cull cattle to become IBR-free.

In 34 herds (16%) one or more seropositive cows were found (mean 1.91; min. 1 – max. 6). In total, 65 cows (1.4%) were seropositive, and their fate after testing is summarized in Table 1. Typically they were the oldest cow(s) in the herd or purchased cows. The average age of seropositive cows was 9.3 years.

Of the 65 seropositive cows, 38 cows were culled to the slaughterhouse, 2 cows were sold to vaccinating dairy farms and 25 cows were kept. Thus, the majority of seropositive cows (62%) are culled, but still 38% seropositive cows is kept. Out of the 34 herds that detected seropositive cows, 25 (74%) culled them and became IBR-free.

Conclusion

This analysis showed that a lot of known IBR seropositive cows are either kept or traded for live. Culling for slaughter would be most favourable for IBR control. Seropositive cows are a risk for outbreaks on the farm through reactivation. Trading of seropositive cows to other farms is an even greater risk for outbreaks of BoHV1 because mingling of cattle is a known risk factor, even in vaccinated herds. In addition, seropositive cows should be culled in order to minimize the risk for these IBR-unsuspected herds to become re-infected on the brink of becoming IBR-free by one of the last seropositive cows.

Veterinary practitioners can play an important role in persuading the farmer to cull a seropositive cow and thereby become IBR-free. The removal should be permanent (i.e. slaughter), and selling into other herds should be averted. The veterinary practitioners can proactively consult the farmer when a seropositive result is obtained. Their advice is hugely important as farmers have great confidence in them and supports the aim of the Dutch dairy cattle industry to get rid of IBR.

Scheme 2. Results IBR programme switch test

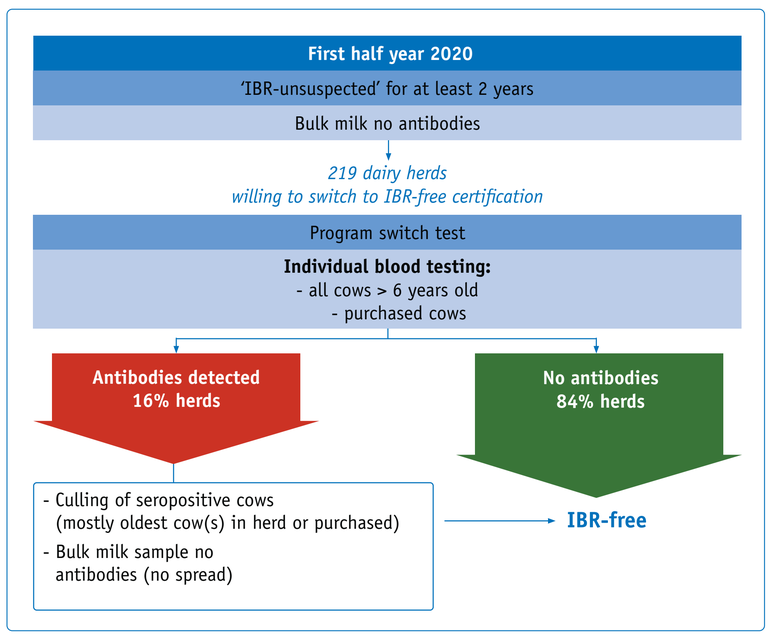


Table 1. Fate of 65 IBR seropositive cows that were found in the programme switch test IBR-unsuspected to IBR-free in the first half year of 2020

The fate of the cows	# cows	%
Kept	25	38
Culled for slaughter	38	58
Culled to other herds	2	3
Total	**65**	**100**

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