



FMD outbreak and control The Netherlands

Introduction

On 20 February 2001 the European livestock industry was put on high alert due to the outbreak of FMD with the Pan-Asian O strain in the UK. The disease spread from the UK to France, Northern Ireland and The Netherlands. On 21 March the first outbreak was confirmed in The Netherlands. The outbreak occurred in goats on a farm, which imported calves from Ireland. Control measures consisted of movement restrictions, blocking off infected and suspected compartments, stamping out and emergency vaccination. FMD did not occur outside the provinces of Friesland (North), Gelderland and Overijssel (East). In Friesland only 2 cases occurred, which were contained without further spread. The other cases occurred in Gelderland and Overijssel. The last case took place on 22 April 2001. The Netherlands is now again recognised by OIE as FMD-free country.

First cases

In February (healthy FMD-free) calves were exported from Ireland to The Netherlands. The calves were transported by boat to an overnight resting farm in France and from there by truck to The Netherlands. On the resting farm the calves stayed overnight next to sheep, which were imported from the U.K. The sheep were infected with FMD and infected the calves through the overnight contact. The calves arrived in The Netherlands on 24 February.

On 15 March a suspected case of FMD in goats of the farm, which imported the calves, was reported and the outbreak was confirmed virologically on 21 March. The farm had 74 calves (for meat-production) and 530 dairy goats. On 15 March some goats were slow and suffered from reduced milk production and clinical signs, typical for FMD. The imported calves were clinically completely healthy and did not show any signs of disease.

Further cases also involved clinical disease in cattle. In the first cases people seem to have played an important role in the transmission of the virus from farm to farm.

Control measures before and after the first outbreak

European Directive 85/511/EEC describes the control measures, which have to be taken by member-states. The measures, which were taken in The Netherlands reached even farther than the European Directive.

The Dutch Ministry of Agriculture already announced control measures shortly after the outbreak in the UK. The measures were focused on the outbreak in the UK and on internal control in The Netherlands.

Immediately after the first case of FMD in France, wider controls were implemented.

After the first outbreak in The Netherlands a set of very stringent control measures was announced.



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Summary of the control measures:

- Immediate stand-still: transport to and from livestock farms was forbidden for 72 hours in the whole country. The transport ban did not only include animals but also milk, manure, feed and other materials, which might transfer an infection.
- The movement restrictions were later reduced to only those compartments, which were infected or suspected of infection.
- Immediate slaughter of all animals on the infected farm.
- Preventive culling of all FMD sensitive animals within 1-2 kilometres around the infected farm and from all farms outside this area, which might have had contact with the infected farm.
- The European Commission gave permission to carry out emergency vaccination in zones of 2 kilometres around an outbreak.

Background of the European non-vaccination policy

Most countries, which eradicated FMD in the past, have used, amongst other stringent control measures, vaccination as an essential tool. Although vaccination alone is not sufficient to eradicate, vaccination reduces the amount of virus circulating in the field. If vaccination is done according a very rigid scheme, the amount of circulating field virus is reduced to such an extent, that the infection eventually dies out.

FMD vaccination hampers efforts by Governments to monitor the disease. Antibodies after vaccination could not be differentiated from antibodies after infection. Therefore it was impossible to determine the absence of a virus infection in vaccinated animals by conventional means. This is the basis for the European non-vaccination policy.

The highest FMD free status, free without vaccination, necessary for international trade to most important export markets, can only be obtained when the exporting country is free from FMD **and** after vaccination has been stopped for 1 year.

Because of the long period of 1 year, during which export to important markets like Japan and the US is blocked, exporting countries are very reluctant to start vaccination in case of outbreaks.

FMD Vaccination in The Netherlands

In spite of the very stringent control measures the disease was still not contained.

Outbreaks:

| Week number | Number of new outbreaks (infected farms) |
|----------------|--|
| 12 (>19 March) | 5 |
| 13 (>26 March) | 7 |
| 14 (> 2 April) | 6 |

FMD has been eradicated from The Netherlands before, using vaccination as an essential tool. Always the vaccine, which was produced by the ID-Lelystad (before called Central Veterinary Institute), Decivac FMD, has been used

successfully. The experience with the vaccine has been very good but vaccination has always been combined with other very strict control procedures. The Dutch Government was therefore very much in favour to use vaccination in case of the March outbreak.

Since The Netherlands are part of the European Community, veterinary control measures, such as FMD vaccination, need approval of the Permanent Veterinary Committee in Europe. Permission to start vaccination was obtained by the end of March but only under certain very strict conditions, which included that in the end all vaccinated animals had to be destroyed.

Preventive culling of contact farms is seen as an effective tool towards eradication. However the destruction of large numbers of animals is logistically an enormous task. Destruction in The Netherlands is done in special rendering plants. The number of carcasses, which needed to be destroyed, was far more than the capacity of the plants. The time between the decision to slaughter and the actual slaughter and destruction would have been too long. Delays in the destruction of potentially infected animals could possibly result in virus excretion by these animals, which would carry an important risk to the success of the eradication.

The ring vaccination in 2 kilometres around infected farms, even in combination with very stringent control measures, was not sufficient. The outbreak seemed to continue outside the vaccinated rings in the area where the first cases occurred.

The result of area vaccination

In order to contain the outbreak in this area The Netherlands asked and received permission from the European Commission to vaccinate the whole area. A triangle between the cities of Apeldoorn, Deventer and Zwolle was vaccinated. A standard batch of Decivac O1Manisa (3 PD₅₀ per dose), Double Oil Emulsion (DOE), 2 ml per animal was used.

In total, including the ring-vaccinations, 177.474 on 1931 have been vaccinated:

- 62.495 cattle
- 85.911 pigs
- 23.401 sheep
- 5.585 goats
- 85 others

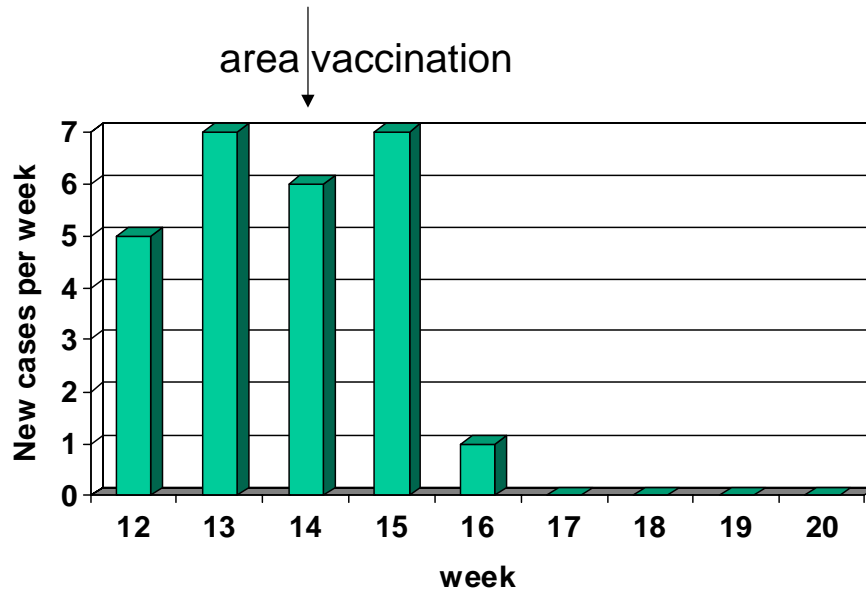
Within 8 days after area vaccination, there were no new clinical cases of FMD reported in the area and The Netherlands remained free from FMD. The excellent result of the FMD control programme is due to a combination of very stringent control measures, in which the exact role of vaccination is difficult to determine.

It is a fact however, that in spite of very intensive control measures from the start of the outbreak, new outbreaks kept on being reported outside the vaccinated rings. Only after the vaccination of the infected area with Decivac O1Manisa the spread of the infection was stopped.

The successful eradication of FMD in this outbreak and previous outbreaks in The Netherlands with the application of Decivac, shows the importance and the efficiency of the vaccine in the control of FMD.

Number of new outbreaks (=infected farms) per week:

Outbreaks and vaccination



Conclusions

- Stringent stamping-out and movement restrictions, in combination with ring-vaccination within 2 kilometres was not sufficient to contain the outbreak. New cases broke out outside the vaccinated rings.
- The European Commission granted the permission to extend vaccination from ring-vaccination towards vaccination of a whole area.
- As from 8 days after area-vaccination, no new clinical cases were reported.
- Vaccination was carried out with Decivac O₁ Manisa, DOE, 3 PD₅₀ per dose.
- The European Commission only granted permission to vaccinate on the condition that all vaccinated animals would be destroyed.
- The general public and the farmers fiercely opposed the massive destruction of healthy vaccinated animals.