

Vaccination versus non-vaccination of livestock in the EU

G. Henk Wentink

CR Delta, Burgemeester Matsersingel 200, 6843 NZ Arnhem, The Netherlands

At the 5th International Congress of the European Society for Veterinary Virology (ESVV), held in Brescia, Italy in August 2000, Dr. Westergaard presented a paper on the strategies used to control major viral infectious diseases of livestock in Europe. He emphasised the successful eradication of many viral diseases from the continent. Up-to-date, rapid diagnostic tests have helped attain these successes by tracing and eliminating infected herds, and it remains a challenge for the veterinary virologists, immunologists and epidemiologists to continue the development of adequate testing systems to achieve and maintain the disease free status. Programmes of eradication were responsible for eliminating recent epizootic outbreaks of Classical Swine Fever (CSF) in Belgium (1993), Germany and the Netherlands (1998).



It is becoming increasingly difficult, however, to prevent and control disease outbreaks, with travel becoming easier and more popular than ever, evidenced by the growing annual increase in the volume of traffic. Large numbers of animals are also being transported between, into and out of countries within Europe (Table 1). Pathogens may be introduced unwittingly into a country, hidden either in food of animal origin or with shipments of live animals, and may cause an epizootic in the non-vaccinated animal population. The careless disposal of unwanted food of animal origin may also introduce disease agents into a country - there are, and always will be, routes through which pathogens enter a country. With this in mind, perhaps a second thought should be given to the ease with which they may be introduced intentionally into countries with a susceptible and vulnerable food animal population.

Animals transported between EU countries, and imported into and exported from EU countries		
	1990	1998
Cattle head x 10⁶		
Import	3.9	3.6
Export	2.9	3.2
Sheep head x 10⁶		
Import	6.4	3.9
Export	3.9	2.2
Swine head x 10⁶		
Import	7.1	6.7
Export	7.5	6.6
Goat head x 10⁴		
Import	4.2	6.8
Export	4.2	8.8

Table 1. Numbers of cattle, sheep, pigs and goats transported between, into and out of EU* countries in 1990 and 1998.

* Countries include Belgium - Luxemburg, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom.

Source: FAOSTAT Database Results (FAOSTAT = the Food and Agriculture Organisation of the United Nations' statistical databases)

Transport of animals, once a pathogen has been introduced into a vulnerable population, contributes considerably to the spread of the disease. It is alarming, therefore, to learn that last year 1,000,000 animals were shipped from the UK to the European continent, and in the first few months of 2001 - before FMD was diagnosed - as many as 100,000 cows, pigs, sheep and deer made the same journey. Once on the Continent these animals were distributed to numerous farms.

The non-vaccination and eradication policy of the EU is maintained to allow the unrestricted trade of animals and their products worldwide, but it leaves the food animal population vulnerable to infectious diseases. Europe's food surpluses are destined for sale on the world market and must, therefore, meet the necessary health requirements for that market. In addition, these surpluses are sold with considerable financial support from the EU (through subsidies), leaving farmers in developing countries little chance to compete - a situation that has contributed to the many African, Central Asian and South American immigrants trying to enter illegally into Western countries.

In his opening address at the 5th ESVV Congress, Professor Marian Horzinek put a question to the audience: "What reason is there for differentiating Veterinary Virology from Virology?" It may sound a simple question, but is a difficult one to answer. It would be simpler to answer: "How can food animal virology be differentiated from virology? To which the answer might be: food animal virologists search for antigens to improve diagnostic methods used for the detection of infected animals and herds that are subsequently destroyed, while the general virologists want to find antigens that will stimulate the animals' immune system to prevent deleterious effects after inevitable infection.

Over 11 million pigs were killed in The Netherlands, and millions more in Germany, to limit the spread of CSF. In 1993 the same devastating task was carried out in Belgium, and now hundreds of thousand of animals are being destroyed in the UK and in Western Europe in order to prevent, or at least to limit, the spread of Foot and Mouth Disease (FMD). It is believed that food products of animal origin were responsible for introducing the pathogen that has given rise to this outbreak, and the mass killing of animals is an attempt to save as many of the unvaccinated, susceptible herds and flocks of Western Europe as possible. Healthy animals are being massacred to retain, or to restore, Western Europe's disease free status. The justification for this action is to maintain the high status given to disease free countries, which ultimately has economic benefits. If a lower health status were to be accepted - by adopting a vaccination policy - then the export of surplus food of animal origin would be obstructed. Thus, food animals are killed to continue unrestricted export from the EU. To put another perspective on this situation, the viruses that cause FMD and CSF in livestock are not infectious to man. It brings to mind a variant on a line taken from a Dutch entertainer: "If you were to make a pile of all the healthy animals killed simply to limit the spread of infectious diseases that are no threat to human health, you would have a mountain so high that from its top you would see people in Africa dying of starvation".



Discriminatory vaccines (DIVA; Professor Jan van Oirschot, at the 5th ESVV Congress) could decrease the risk of disease when applied to vulnerable animal populations, and would make the preventive killing of healthy animals unnecessary. It is not economically attractive to vaccinate all susceptible animals in a country.

Non-vaccination should be accompanied with a restriction, or total ban, on the transport of live animals. Instead, the transport of food of animal origin or other biological products should suffice. In addition, reduced food production in the Western World should provide farmers in developing countries with a better chance to make a living, which should then lead to a reduction in the number of people attempting illegal immigration.