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Foot and Mouth Disease (FMD) in Asia and Europe – a call for change

The European Livestock Association has some of the most authoritative and experienced scientists¹ on FMD among their members.

The measures taken by Japan and South Korea to bring their recent and current FMD-outbreaks under control will have serious repercussions for other countries globally. Now, we see a risk of spread of FMD in Bulgaria to Europe. Without the rapid identification of disease using currently available diagnostic technologies and the rapid implementation of vaccination to live, outbreaks that could be quickly controlled are likely to spread unpredictably and widely, causing huge damage to human and animal welfare and to the wide economy. Therefore ELA feels it important to make our views known to the OIE and to ask for an urgent change which will encourage sensible control measures and penalise destructive control measures.

The earlier statement of the Korean Authorities that vaccination would not be used because of the time it takes to regain a “FMD free without vaccination” status for export, and resorting instead to pre-emptive slaughter of at least one million of animals so far, shows that the legislative framework in the case of an outbreak of FMD has to be re-assessed as soon as possible, especially in the light of recent developments in the EU. (FMD in wild boar in Bulgaria http://www.oie.int/wahis/reports/en_imm_0000010138_20110107_122452.pdf and detection of FMD infected livestock in the Burgas region)

The European Livestock Association would urge you to give careful consideration to the following:

The main objective of both the Japanese and Korean authorities was to stop the spread of disease, bring the epidemic under control and return to FMD-free status without vaccination.

It was thought that this objective could be achieved by the stamping out (i.e. killing of all animals) of infected farms and the killing of every susceptible animal around a confirmed or suspected outbreak to prevent the virus from spreading.

¹ *Control and eradication of foot-and-mouth disease, - Paul Sutmoller, Simon Barteling, Raul Casas Olascoaga, Keith Sumption – Virus Research 91 (2003) 101-144.*

“The successful control and eradication of Foot and Mouth Disease epidemics in South America in 2001”, by P. Sutmoller and R. Casas Olascoaga. This article is on the Internet in PDF format.

However, so far this policy has failed with devastating consequences:

- According to the latest information from S.Korea, more than 1.1 million animals have been slaughtered, approximately 1 million more animals are earmarked for destruction - yet the spread of disease has not slowed down
- Socio-economic and practical implications are huge;
- Widespread slaughter, especially of healthy animals, causes welfare problems in humans and animals;
- Reports from S. Korea of the burying of animals alive are, if true, indefensible and should be unacceptable by all standards of health and welfare. Contamination of drinking water as a result of the disposal of carcasses has been proven. Consequently, the widespread infection of humans with various diseases can be anticipated;
- It is impossible to ensure accurate diagnosis when the emphasis is on slaughter;
- It is impossible to maintain biosecurity (shortage of veterinary surgeons, slaughter teams, vaccination teams - and involvement of parties not trained in disease related actions) and spread of virus through fomites;
- Livestock that is perfectly safe to eat is being destroyed. This is especially inappropriate for a country like South Korea, relying as it does on imports of meat rather than being a large exporter;
- Widespread slaughter results in unnecessary loss of valuable genetic bloodlines, etc.

There are more effective alternatives:

Vaccination to kill should be changed to vaccination to live. The earlier the decision to vaccinate is taken the more effective it is likely to be. Vaccination should be used in combination with:

- stopping all movements of susceptible animals
- isolation and surveillance of animals suspected to have been in contact with the virus and consecutive testing. Once all the susceptible animals have been vaccinated, if a contact occurs, then surveillance by DIVA serology testing can be done later, before movement is allowed. Even if one animal is infected from the contact the virus infection cannot spread further among the other successfully vaccinated herd members.
- slaughter of animals on infected premises and use of sophisticated diagnostic technology on genuine dangerous contacts (i.e. those animals that are suspected of having been exposed to disease);
- utilizing ring vaccination from uninfected areas (surveillance zone) inwards towards the areas where there is confirmed infection (protection zone);
- maintaining biosecurity;

In consideration of the above we observe that:

- Rapid diagnostic tests are available that are proven to work reliably under field conditions so that infected animals can be detected early in the course of infection
- Diagnosis based on clinical signs can be unreliable. The disease is not always easy to diagnose and inexperienced clinicians may confuse other diseases with FMD. In addition, diagnosis based on clinical signs is usually later in the course of infection than that from laboratory tests.
- Modern high potency vaccines are very effective and provide protective immunity in a matter of days.

- Differentiation of infected animals from vaccinated animals (DIVA strategy) reliably differentiates antibodies raised in vaccinated animals from antibodies raised because of infection with FMD virus (FMDV).

- Even if animals incubating FMDV are inadvertently vaccinated, they will subsequently shed less virus - a clear advantage of vaccination.

With regard to the outbreak of FMD in the Burgas region of Bulgaria, the involvement of wildlife decreases the effectiveness of control measures that rely on movement restrictions and stamping out, and increases the potential effectiveness of widespread vaccination. Not only would animals be protected, but farmers, food transport, tourists, etc, can make plans with more certainty than would be possible without vaccination.

We draw your attention to the effective use of virus vaccines that induce protective immunity by neutralizing antibody, thus preventing infection in the first place after exposure. Such vaccines can and have been used to control and eliminate outbreaks of infection with highly infectious viruses such as bluetongue virus, BTV8 and BTV1 in Northern Europe, rabies in foxes in Europe, peste des petits ruminants (PPR), and most notably the eradication of rinderpest confirmed in 2010, a veterinary success comparable to global smallpox eradication. As the year 2011 is to become the "landmark year for the veterinary profession around the world" it is time for the veterinary profession put the experience they have gained during the last 250 years into practice and moved on to use the tools of the 21st century instead of taking part in an unnecessary barbaric and medieval carnage.

With regards,

the ELA scientists and FMD experts

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