



SEMINARIO INTERNACIONAL PRÉ COSALFA

Guía técnica para la transición de estatus sanitario de Fiebre Aftosa en Sudamérica: metodologías para su implementación

Punta del Este, Uruguay, 4 y 5 de abril de 2016

IDENTIFICATION OF FOOT AND MOUTH DISEASE RISK AREAS USING A MULTI-CRITERIA ANALYSIS APPROACH

*D.V. Santos^{1,2}, G.S. Silva², E.J. Weber³, H. Hasenack³, F.H.S. Groff⁴, B. Todeschini^{1,2}, M.R. Borba²,
A.A.R. Medeiros^{2,4}, V.B.L. Torman⁵, C.W. Canal⁶, L.G. Corbellini²*

1 Secretaria de Defesa Agropecuária, Ministério da Agricultura, Pecuária e Abastecimento.
Estrada da Ponta Grossa, 3036 - CEP: 91780-580, Porto Alegre / RS, Brazil.

2 Laboratório de Epidemiologia Veterinária (EPILAB), Faculdade de Veterinária,
Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves 9090, CEP 91540-000, Porto Alegre, Brazil.

3 Laboratório de Geoprocessamento (LABGEO), Centro de Ecologia, Universidade Federal do Rio Grande do Sul.
Av. Bento Gonçalves, 9500 - Prédio 43411, CEP 91.540-000, Porto Alegre / RS, Brazil.

4 Departamento de Defesa Agropecuária, Secretaria da Agricultura, Pecuária e Irrigação do Estado do Rio Grande do Sul.
Av. Getúlio Vargas, 1384, CEP: 90150-004, Porto Alegre / RS, Brazil.

5 Departamento de Estatística, Instituto de Matemática - Universidade Federal do Rio Grande do Sul.
Av. Bento Gonçalves, 9500 - Prédio 43111, CEP 91509-900, Porto Alegre / RS, Brazil.

6 Laboratório de Virologia, Faculdade de Veterinária, Faculdade de Veterinária,
Universidade Federal do Rio Grande do Sul. Av. Bento Gonçalves 9090, CEP 91540-000, Porto Alegre, Brazil.

Foot and Mouth disease (FMD) is a global disease which affects cloven-hooved livestock and wildlife. This contagious viral disease has been struggled over for decades leading to various measures to control, eradicate and prevent it by National Official Veterinary Services worldwide. Nowadays, due to human and financial resources scarcity, risk areas identification may be set as a priority to FMD target surveillance. In our study, a knowledge-driven spatial model was built to identify risk areas for FMD occurrence and to evaluate FMD surveillance performance in Rio Grande do Sul State, Brazil. To this purpose, Multi-criteria Decision Analysis was used as a tool to seek multiple and conflicting criteria, resulting in a preferred course of action. Thirteen South American experts analyzed 18 variables of the model associated with FMD introduction and dissemination pathways in Rio Grande do Sul. As a result, FMD high risk areas were mainly identified in the international borders and in central region of the State. A final model accuracy was obtained after contrasted to historical FMD outbreaks. The current FMD surveillance performance was assessed and recommendations are made to improve surveillance activities in critical areas.

KEYWORDS: Rio Grande do Sul State; FMD; Knowledge-driven risk mapping; MCDA; Animal Health