11th Conference on Dynamical Systems Applied to Biology and Natural Sciences DSABNS 2020 Trento, Italy, February 4-7, 2020

MATHEMATICAL MODEL TO SIMULATE SPATIAL SPREAD OF INFECTIOUS DISEASES

Fernando Ferreira*, Germana V. Osowski, Marcos Amaku, JosÉ H. H. Grisi-Filho and José S. Ferreira Neto

Faculdade de Medicina Veterinária e Zootecnia, Universidade de São Paulo, Brazil

fferreir@usp.br (*corresponding author), germanav.osowski@usp.br, amaku@usp.br, grisi@usp.br, jsoares@usp.br

A multi-compartmental stochastic mathematical model is proposed to simulate the spread of diseases in animal populations. The dynamics of the disease will be simulated within and between properties. The spread between properties is carried out, at a short distance, considering the distance between infected and non-infected properties. Spreading over long distances will be carried out considering the structure of animal trade network.

©DSABNS ISBN: 978-989-98750-7-4