QUANTITATIVE ANIMAL IMPORT RISK ANALYSIS

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INTRODUCTION

This is a three day course to introduce the participant to risk analysis ideas in the field of animal import risk. The course is based on David Vose's book 'Risk Analysis' and draws from his fifteen years experience in quantitative modeling on animal health issues.

OBJECTIVES

Participants should leave this course with an appreciation of what constitutes a complete quantitative animal import risk analysis. They will have been exposed to the key ideas in animal import risk analysis, and have had some opportunity to practice the basic risk modeling techniques.

LANGUAGE

The course will be conducted in English, although David can also provide assistance in French.

COST

450 USD

DATES

22 to 24 of November

VENUE

Faculty of Veterinary Medicine, University of Chile. Santiago.

COURSE MATERIALS

Each participant will receive a CD at the beginning of the course of all presented material (PowerPoint shows, Excel/@RISK models). Any Additional models developed during the course in response to participants' questions will be made available on a dedicated, private Web site.

PROGRAM OF TOPICS

NOVEMBER 22nd, 2003

Introduction to risk analysis and its role in decision making
The basics of quantitative risk analysis:
- Scenario trees
- Probability ideas
- Statistical ideas

Populating and refining a conceptual model with data
Calculating the probability an animal is infected with a pathogen:
- Given it is randomly selected from a population
- ... and has tested negative
- Given it is randomly selected from a herd
- ... and has tested negative
- Some other useful probability identities

When calculating gets too difficult:
- Introduction to Monte Carlo simulation with @RISK/Excel

Some simple probability distributions

NOVEMBER 23rd, 2003

Three basic stochastic processes, their distributions and uses:
- Binomial process
- Hypergeometric process
- Poisson process
- Example models, exercises

NOVEMBER 24th, 2003

Incorporating uncertainty in probability estimates:
- Bayesian Inference
- Classical statistics
- Examples:
  - Calculating the effect of sampling size on population estimates
  - Calculating the effect of test sensitivity and specificity on prevalence estimates
  - Sampling

Producing and using risk analysis results
- Standard graphs and statistics
- Sensitivity analysis (spider) plots
- Scatter plots

Appreciating the impact of having more information