WEB-BASED DATABASE AND GIS TO SUPPORT MEDREONET

L. Savini[1] C. Ippoliti[1]
A. Di Lorenzo[1] A. Conte[1*]

The main objective of Medreonet is to share and exchange data, expertise, experiences and information on bluetongue (BT), African horse sickness (AHS) and epizootic haemorrhagic disease (EHD). In this context the web-based database and geographical information system (GIS) application is the most suitable tool to provide a friendly environment that is easy to use by the different actors involved in the project. The web-based database and GIS application has been developed using ESRI software (release 9.0) (ArcIMS, ArcGIS desktop, ArcSDE), Java and Active Server Pages (ASP). Users can access the public web-GIS through a generic Internet browser and the information required (maps and data) are published by ArcIMS using web server technology. ArcSDE and an Oracle relational database management system (release 8i) (RDBMS) are used to store and manage spatial and alphanumerical data. The authorized users can input new information and data on their geographical area of competence directly online, using ASP and a web interface. The accuracy of the data entered into the information system (e.g. missing values, duplicates, incorrect data format, etc.) is guaranteed by automatic check procedures that operate during the updating of the centralized database. The database was designed to store all the epidemiological data deemed relevant by the experts and all the scientific results, when available, produced during the project. In particular, the data collected cover three main sets of information which are displayed and spread through an interactive, dynamic mapping system:

– outbreak distribution, i.e. the geographical distribution of the disease by year and serotype at the regional level in the European Union (EU) and Mediterranean countries for BT, AHS, and EHD, respectively;

– serological surveillance results, i.e. geographical distribution of the true and apparent prevalence of infection based on the analyses of BT serological surveillance data;

– entomological distribution, i.e. geographical distribution of nine vector species by year and month, number of catch sites, number of catches, vector and maximum number of midges at the regional level in the EU and Mediterranean countries. Medreonet database and GIS application fulfill all the requirements stipulated in the project; moreover the system is fully scalable and may adapt to future demands.

KEYWORDS: BLUETONGUE – AFRICAN HORSE SICKNESS – GEOGRAPHIC INFORMATION SYSTEM.

1. Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale", 64100 Teramo, Italy.

* Corresponding author
Tel.: +39 0861 332246; Fax: +39 0861 332251
E-mail: a.conte@izs.it

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