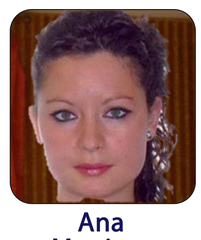
Design and Implementation of a Collaborative Epidemiological Surveillance System for Aquaculture

Ana Muniesa[1*], Almoraima Gavira[3], Jordi López[2], Santiago Cabaleiro[4] , Ignacio de Blas[1]

[1] Dept. of Infectious Diseases and Epidemiology, Faculty of Veterinary, Universidad de Zaragoza (Spain)
[2] Agrupación de Defensa Sanitaria Acuicultura de la Comunitat Valenciana (ADS ACUIVAL)
[3] Federación Española de Agrupaciones de Defensa Sanitaria de Acuicultura (FEADSA)
[4] Cluster de la Acuicultura de Galicia (CETGA)

* e-mail: animuni@unizar.es

Download this poster


Ana Muniesa


Almoraima Gavira


Jordi López


Santiago Cabaleiro


Nacho de Blas

Abstract

We have taken as reference the Epidemiological Alert System and Aquaculture Management (SAEMA) developed as a passive surveillance system , which detects changes in production levels of shrimp farms in the inner estuary of the Gulf of Guayaquil (Ecuador).

The main difference between SAEMA and VECA is that our tool has been designed taking into account the specific needs of the Spanish fish farms, including the specific characteristics to the different production systems: nurseries, tanks, ponds...

The main objective of the project is to develop an Interactive and Collaborative Epidemiological Alert System in Aquaculture applied to characterize diseases that currently most concern and affect the Spanish aquaculture sector and lay the foundation to prevent future diseases that cause incalculable losses.

VECA implements an epidemiological survillance system, validated by experts and users, which allows collecting real-time information of each facility on production data, origin of animals, environmental parameters, disease status and therapeutic and prophylactic measures.

Based on the data collected and the results of preliminary epidemiological analyzes have been selected to design the most relevant index which will set different levels of health warning, so to help those responsible for aquatic animal health variables facilities and the producers themselves to make the right decisions.

Thanks to the initiative of FEADSA all the aquaculture sector can benefit from VECA platform, especially veterinary aquaculture Associations for Livestock Health Protection (ADSG) and technicians of aquaculture production companies.

Owners or those responsible for a farm who wish to collaborate in the development of this system of epidemic alert and to prevent future diseases that cause incalculable losses in the sector can participate.

APROMAR Asociación Empresarial de Productores de Cultivos Marinos

Cluster de la Acuicultura de Galicia
Centro Tecnológico Gallego de Acuicultura

ADS Acuival® AGRUPACIÓN DE DEFENSA SANITARIA ACUICULTURA DE LA COMUNITAT VALENCIANA

ASEMA

FEADSA FEDERACIÓN ESPAÑOLA DE AGRUPACIONES DE DEFENSA SANITARIA DE ACUICULTURA

Facultad de Veterinaria Universidad Zaragoza

GOBIERNO DE ESPAÑA
MINISTERIO DE MEDIO AMBIENTE Y MEDIO RURAL Y MARINO

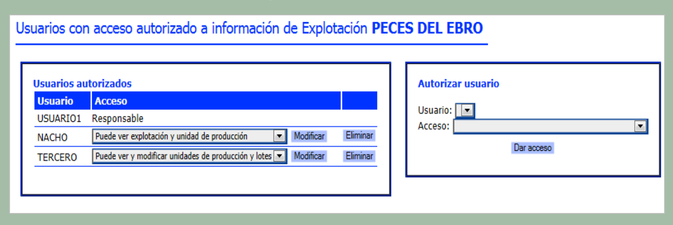
VECA: Vigilancia Epidemiológica Colaborativa en Acuicultura

http://veca.winepi.net

Task 1: Data collection system

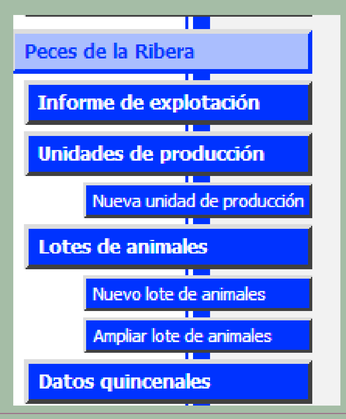
1.1. Confidenciality of data

One of the requirements of stakeholder was to implement strong security measures in order to warrant the confidenciality of data. For these reason, users access is controlled by password and different levels of access are possible, and all relevant variables are encrypted and obfuscated in the database.



1.2. Design of database

Generally the database related with VECA consists of five basic entities (tables): Users, Farms, Units of production, Batches of animals and Quarterly management.



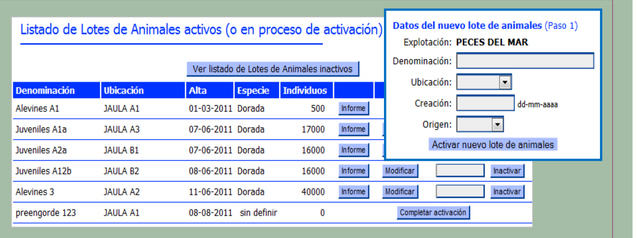
1.3. Collection of data

Farm

Basic information about location and type of facilities

Batches of animals

They are defined as the set of animals group of individuals having a common origin and is a co-evolution (origin, input date, quantity, type, specie…)



Units of production

They are each individualized infrastructure that may contain fish (type, capacity…)

Quarterly data

In order to collect different information about the studied variables (environmental, management, movements, pathology, health), it is necessary to fill in the next forms quarterly

Task 2 (in progress): Real time epidemiological analysis

Currently we are implementing and evaluating the algorithms in order to carry out the epidemiological analysis.

Acknowledgment

This project has been funded with an amount corresponding to the call for aid for collective action in the public interest provided for in Article 37 of Regulation (EC) No 1198/2006, for associative entities extraction and aquaculture fisheries subsidy and dedicated marketing and processing.

The Society for Veterinary Epidemiology and Preventive Medicine Annual Conference
Dublin, Ireland 26-28 March 2014