

Empirical tool to estimate the costs to be incurred in case of ASF outbreaks eradication

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BACKGROUND

African Swine Fever (ASF) is an highly contagious viral disease, for which notification to the Competent Authorities of the National Veterinary Service is required.

Originating from Africa ASF, has reached Europe for several decades. Since 1978, ASF virus reached Italy (Sardinia), too, where it has assumed endemic features.

Recently, the disease has attracted ever increasing attention because the fact that since 2007, year of its appearance in Georgia (Poti), it has quickly spread up to the north-west until reaching continental EU Territory.

The interaction between the domestic pig population and the different wildboar populations makes hard prevention and control measure management.



MATERIAL AND METHODS

Reference was made to the Italian Guide Lines for Epidemic Emergencies and to the Manual for Classical and African Swine Fever, in order to outline, in terms of cost, everything provided for, in the above mentioned procedures.

According the different phases of management/eradication of an ASF outbreak, (Suspect, Investigation, Confirmation, Answer) each specific expense item (people, vehicles, equipment, laboratory analysis, product for sedation and/or euthanasia, mobile restrainer, carcass disposal, compensation for the "stamping out", disinfectant, etc.) was individually quantified in terms of time and relative cost.

Microsoft Excel models were used to allow a real-time calculation of the unit cost of the various envisaged items, in relation to current market prices and/or employment contracts or services (National Agreements).

A research of the unit cost of each item of expenditure was, then, performed in different scenarios (rural and commercial farms).



RESULTS

The resulting product is a "compound spreadsheet" able to provide the "estimate cost" of the management/eradication of ASF outbreak, on the basis of information about pig population and involved farm size.

Costs relative to every hypothesized scenario are summarised in Table 1.

It is clearly highlighted how unitary financial burden is very significant, especially for the rural farms.

Table 1

COST/PHASE	Rural-Farm 10 pigs present (avg. kg160) (euro €)	Rural-Farm 5 sows (on production) (euro €)	Indoor Fattening Herd 1200 pigs (AI/AO) (euro €)	Indoor Fattening Herd 1200 pigs (continuous pig flow) (euro €)	Complete cycle sow farm 500 sows (on production) (euro €)
SUSPECT	2582,24	2582,24	2582,24	2582,24	2582,24
Lab Analysis	206,6	909,04	1177,62	1177,62	1198,28
EPIDEM. INVESTIGATION	6048	6048	6048	6048	6048
CONFIRMATION	18292	18292	18292	18292	18292
ANSWER	13267,5	37620,27	354737,4	316253,1	646036,82
TOTAL COST	40396,3	65451,6	382836,8	344352,6	674157,4
Cost/pig	4039,6	667,9	319,0	286,9	472,1
Cost/kg meat	25,2	8,4	2,9	3,03	3,56

CONCLUSIONS

The economic damage that ASF can be able to cause is significant, both as a direct damage to the affected farms and the territory and as indirect penalties due to unavoidable commercial "limitations".

The economic information could positively influence the managerial optimization of this emergency.

The potentially inferable data can be able to stimulate improvements in the optimization of the "Early Warning" and "Prompt Reaction" phases (to be reviewed in "peace time").

The creation of the calculation model on the provisions of the "National Handbook for Epidemic Emergencies" and the "excel" format make our product adaptable to the management/eradication of any infective disease outbreak where "stamping out" policy is foreseen.