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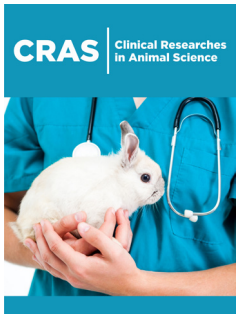
Mini Review

Short Message Service (SMS) Alert of Occurrence of 13 Economically Important Livestock Diseases Two Months' in Advance to Veterinary Officers at Taluka/Region Level of Karnataka State: A Methodology



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Introduction

Now-a-days, smart mobile phones are the part and parcel of every household and so the essential part of our Veterinarians also, be it a livestock census procedure or searching for treatment for a particular animal disease. Mobile phones act as a handy and ready reckoner for every activity of our life. Utilizing its simplicity in communicating information, a methodology/process is developed to alert of occurrence of 13 economically important livestock diseases two months advance to Veterinary Officers at Taluka/Region level of Karnataka State through Short Message Service (SMS), by seeing it a Veterinary Officer/Doctor can prepare himself or his team to put in place a treatment aspects or control/preventive, biosafety and biosecurity measures for the disease.

Thirteen economically important livestock diseases which are endemic in nature are taken into consideration for analysis and in turn to alert occurrence of diseases two months advance in 176 talukas/regions of 30 districts of Karnataka. Diseases are listed in Table 1. Alert through SMS is sent to 1710 Veterinary Officers/Doctors. Officers at the policy level are also given alert in this process. To the best of our knowledge, this is a unique methodology and first of its nature [1].

Table 1: List of thirteen Livestock diseases for alert in 176 Talukas of Karnataka.

Sl No.	Name of the Disease
1	Anthrax
2	Babesiosis
3	Black quarter
4	Bluetongue
5	Enterotoxaemia
6	Fascioliasis
7	Foot and Mouth Disease
8	Haemorrhagic Septicaemia
9	Peste des petits ruminants
10	Sheep and Goat pox
11	Swine Fever
12	Theileriosis
13	Trypanosomiasis

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Methodology/Process

Disease outbreak was predicted by combining the results from generalized linear model, gradient boosting, and random forest model to form master chart containing outbreak reports, remote sensing, and meteorological parameters using R programme and the probability of occurrence of disease two months' advance was sent as an alert through SMS using API integrated (Textlocal.in 2018). An CSV file containing the details of animal disease, region, mobile numbers of Veterinary officers is uploaded into database system using Hypertext preprocessor (PHP) wherein a SMS template will be created and the alert containing the occurrence of disease in a particular taluka/region will be sent to Veterinary Officer working in that particular area.

Stepwise Method/Process of building the information of providing alert of occurrence of disease in particular taluka/region is as follows

1. Predict Risk of occurrence of disease advance in two months

- District wise (30 District) prediction of risk of occurrence of livestock disease using disease outbreak data and environmental variables includes remote sensing s along with host data. The risk has been stratified into very low, low, medium, High and Very High-risk data.

2. Upload CSV Predicted data into Database

- Load the predicted risk information into database along with district, block and its related veterinary officers (1710 Officers) Name and Contact Numbers for sending SMS to each officer.

3. Generated Code (API - application programming interface) Integration

- Using SMS service Provider API generated Key and Approved template, algorithm has been written to send predicted data SMS to all the Veterinary officers at once in a single click.

4. Report Generation

- After sending SMS, Report is generated by exporting the SMS sent details in Excel Format and converted to PDF.

Providing an alert of occurrence of animal disease two months' advance at taluka/region level in Karnataka to Veterinary Officers/ Policy makers through SMS is a handy and keeps them cautious to adopt appropriate treatment, biosafety/biosecurity, preventive and control measures. To the best of our knowledge, this is a unique methodology/process adapted to send alert about animal diseases to Veterinary officers at Taluka/region level and first of its nature.

Summary

SMS alerts of livestock diseases to smart phones at village/ block level will create awareness amongst the livestock farmers through Veterinary Officers. Farmers/Veterinary officers can take appropriate control measures if alerts are given two months in advance.

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References

1. https://www.textlocal.in/