



COBRE/APITMID Seminar Series

A Novel Decision Support System for Vector-Borne Diseases: Applications in Knowledge Extraction in Public Health

A decision support system (DSS) is an interactive computer-based system intended to help entomologists make decisions. This paper proposes a DSS based on datamining using different tools related to classification, prioritization, forecast etc. We demonstrate how DSS can be evolved to classify the different insect species using expert system. Classification and Regression Tree (CART 4.0) a powerful classifier is successfully employed in the data sets of socio-economic parameters responsible for promoting filariasis. CART is able to classify the positive and negative classes by building up certain combination of rules. Self Organizing Map (SOM) is a cluster and visualization tool employed to prioritize the endemic zones of filariasis so that control operations can be taken up on priority basis at village level. Advanced forecasting to predict the outbreak of vector-borne disease is another grand challenge problem in public health. We have developed JEBNET to predict the Per Man Hour Density of vector species of Japanese encephalitis. The forecast results match the ground data with 80-100% accuracy. How these tools can be employed in other areas of agriculture, veterinary sciences etc., will be discussed.

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For further information, call 692-1668