OMICS Group
Conferences
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5th World Congress on
Biotechnology

June 25-27, 2014   Valencia Conference Centre, Valencia, Spain

Defining spatial distribution of mosquito breeding sites and areas under risk using remote sensing - GIS integration

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The present study aimed to use remote sensing and GIS in combination with limited field surveys to delineate the extent of mosquito breeding habitats, areas at risk from mosquito nuisance. Limited mosquito surveys were carried out in Matrouh Governorate, Egypt, to characterize positive breeding wells habitats and its coordinates. The obtained results indicated that there were four mosquito species (namely *Culexpipiens, Ochlerotatusdetritus, Culisetalongiareolata and Cx.laticinctus*) and they were collected. The most prevalent species was *Cs.longiareolata* followed by *Cx.pipiens*. The present study demonstrated that several mosquito vectors are already present in major water (wells) resources/agricultural development and new resorted villages on the coastal zone. GIS was used to create buffer zones 2Km, based on the average adult mosquito flight and to show location of wells, as mosquitogenic. Ecological investigation reveled that the most encouraging environmental parameter for mosquito breeding includes surface water bodies and natural plants. Thus, classified satellite image was used to detect the urban and vegetated areas. Land use/ land cover map indicated that the vegetation areas represent about 35.7% while the urban areas concentrated on the shoreline occupies 1.2% of the total area, located inside the buffer risk zone. Based on information acquired, this study helped in understand that remote sensing technology and GIS are highly effective tools for assessing current and future mosquito breeding distribution and can provide so much comprehensive information, in addition, can help the local, state, and national level organizations to develop a comprehensive plan to keep the mosquito breeding in check.

Biography

Mohamed Mahmoud Sowilem has completed PhD at the age of 40 years from Ain Shams University and received a grant from Chinese Academy of Sciences, Beijing population Republic of China. He has done training courses on "Remote Sensing Applications for African Countries" From16 October to 26 November 2006. Also has undergone training sessions on, blood meal identification by "Direct Enzyme-linked Immunosorbent Assay (ELISA,1988), Applications of diagnostic Molecular Biology, 1999" *Introduction* to ArcGIS I& II (2004). He is Head of the Department of Environmental Studies, National Authority for Remote Sensing and Space Sciences (NARSS), Cairo, Egypt. He has published more than 15 papers in reputed journals and has been serving as an editorial board member of repute.

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J Biotechnol Biomater 2014

ISSN: 2155-952X, JBTBM an open access journal

Biotechnology-2014
June 25-27, 2014

Volume 3, Issue 5

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