Analysis Relationship between Vegetation Cover and Salak Skin Disease in Yazd-Ardakan Plain

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Extended abstract

1- Introduction

Salak/Leishmaniasis is a parasite disease that is transmitted by the bite of infected female sand flies. This disease has been reported in all countries except Australia and South Antarctic. The principal focuses of leishmaniasis are located approximately between 28 to 42 degree north latitude. Leishmaniasis is also reported in Yazd province, Leishmaniasis is divided into two major group, rural and urban, usually the dog and human are urban reservoir(dry salak) and rodents are rural reservoir (wet salak). In this research, we analyzed correlation between vegetation cover and disease prevalence in Yazd-Ardakan plain.

2- Methodology

- The study area

Yazd-Ardakan plain located in one of the barred plains central plateau of Iran in Yazd province and have climatically conditions very hot and dry and adverse weather conditions at the surface on so that excluding the high plains which located in mountainous areas and highlands, other areas of vegetation conditions are not favorable conditions, Just in elevations Shirkooh due to the precipitation received only modest conditions are more favorable. Quality ranges from the slopes of the Shirkooh pans are better than the parts.

- Incidence data and information salak

The data of disease prevalence as monthly during the years 1997 to 2009 are taken from Medical Sciences university of Yazd.

- Satellite images

For investigating correlation between vegetation cover and disease prevalence, it is very important to know about vegetation distribution. So has been used the satellite images from landsat E.T.M,
in 2002 and radar images for extraction vegetation cover by NDVI. In this study were used the Arc hydro and digital elevation model (DEM)\(^2\) and Erdas software version 9.1 and Arcgis 9.3.1.

- plant Indicators

In this study, the vegetation map was produced by Landsat E.T.M 2002. This index was calculated by subtracting the values of brightness in the infrared band (band 3) and near infrared (band 4) by the following equation:

\[
\text{NDVI} = \frac{\text{Band4} - \text{Band3}}{\text{Band4} + \text{Band3}}
\]

According interpretation of these calculations, the region are classified into six classes: non-coverage, low coverage, medium coverage, high coverage and the coverage very high class.

3- Discussion

In recent years due to living conditions in the surrounding towns and geographic distribution development, new focuses of the disease have been spread. One major focus of this disease in the province of Yazd is Yazd -Ardakan plain, that in the range of plain includes trifocal polluted rural areas of Ardakan counties (chah Afzal, Hossen abad, Ahmmad abad, tork abad and Ardakan suburb), Meybod (Bafroeeh) that disease in this area was rural leishmaniasis and Yazd was urban Leishmania.

The factor of vegetation cover affected directly and indirectly on the incidence of leishmaniasis and sand flies biology. The vegetation classes and their buffer were overlapped with disease cases. In certain geographic perspective, the importance of all elements in the disease epidemiologic chain is linked that led to the creation of regional high-capacity Risk (disease).

Comparing spatial models of human disease with vegetation display that the highest incidence of cutaneous leishmaniasis vegetation is concentrated in areas with the lowest amount of coverage as the dominant.

4- Conclusion

In this research, high disease cases have adjustment with little to no vegetation cover. The results of this study, is similar with results of correlation analysis between sandflies and vegetation density of mosquitoes in Brazil (Bavia et al, 2005). The percentages of vegetation cover show salak focuses in Ardakan and Meybod are wet and dry salak that climatic conditions confirmed it. The vegetation cover of Yazd emphasized dry salak or urban salak. Based on the results get of Fisher's LSD method, the average incidence of disease incidence are different in Yazd and Meybod with Ardakan, (Meybod <Ardakan> Yazd).

**Keyword:** Salak, Lieshm ania, Plant Coverage, G.I.S, R.S, Yazd-Ardakan

**References**


Darvish Sefat, A and et al (2007). Sparating the northern boundary of Caspian forest by using multtimes satellite images, Conference Geomatics 86, the mapping country organization.


Dehghani Tafti, A.A (2006).conference "Control of cutaneous leishmaniasis in Kavir regions yazd".


Hooshvar,Z(1986), Introduction to medical geography of Iran, University Jihad pub.


Karami,T, Faraj-Zadeh, M(2004). Land use planning using remote sensing and geographic information systems (Khorrramabad), Geographical Research, Tehran University, No. 47.


Ministry of Health and Medical Education (2010). Sixth National Conference on the fight against diseases transmissible between humans and animals, Imam Khomeini Tehran.

Ministry of Interior (2007). Office of the divisions of the country, the political division map of Yazd province.


The Yazd university of Medical Sciences, (2010).cutaneous salak disease data.
Vahabzadeh, A (2007), the introduction of environment foundations, Mashhad University Jihad Pub.
