

Review Form 3

Journal Name:	Journal of Advances in Biology & Biotechnology
Manuscript Number:	Ms_JABB_123662
Title of the Manuscript:	Geographic information system to study the spatial distribution of cotton pink bollworm, <i>Pectinophora gossypiella</i> (Saunders) (Lepidoptera: Gelichidae) in Jalgaon district, Maharashtra
Type of the Article	Original Research Article

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p>Geographic Information Systems (GIS) are computerized systems for managing and analyzing spatially distributed data. They distinguish them from conventional data processing systems. GIS has been used in population genetics, biological control, and artichoke fly management. For example, the establishment of <i>Rhagoletis pomonella</i> in British Columbia, Canada, was modeled using GIS for ecological niche activities and potential distribution.</p> <p>GIS technology has the potential to map disease vectors, potentially predicting vector infestations and initiating control measures early. This is achieved by storing spatial and attributes data in a scalable, distributed database. GIS can be applied to agriculture, crop management, and monitoring insect pests, enhancing pest control and facilitating the development, testing, and operation of pest monitoring and control programs.</p> <p>The excessive use of insecticides has led to an increase in beneficial predatory insect species, causing resistance. A horizontal deployment pattern in cotton fields can suppress bollworm populations. A study used geographical position information and the UTM coordinate system to determine the distribution of cotton pink bollworm. Kriging analysis can identify "hot spots" and help producers concentrate control efforts.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>The title of the article is suitable</p>	
<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>The abstract of the article is comprehensive</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>Yes, the subsections and the structure of the manuscript appropriate</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>GIS and remote sensing technologies have significantly benefited plant protection in agricultural applications. Researchers and educators use GIS and existing concepts for entomological, plant pathology, and plant biology. GIS can be even more useful in developing insect pest models, distribution maps, and risk assessments. However, adoption of innovations varies among related fields. Pink bollworm (PBW) is a significant pest of cotton, requiring control and monitoring to minimize its spread. Innovations in field monitoring and modeling can help growers, industries, government, and conservation groups manage resources effectively. Suggestions include improving insect forecasting models and testing problems encountered in the last phase of successful PB elimination from GIS spatial models.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. :</p>	<p>Yes, the references are sufficient and recent</p> <p>Some additional references</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hutchison, W. D., & Norton, G. A. (2009). "Spatially Explicit Approaches to Integrated Pest Management." <i>Environmental Entomology</i>, which discusses the use of GIS in pest management. <input type="checkbox"/> Carrière, Y., & Eilers-Kirk, C. (2006). "Ecology, Genetics, and Population Dynamics of Pink Bollworm." This book chapter explores spatial distribution in agricultural landscapes. <input type="checkbox"/> Soberón, J., & Peterson, A. T. (2005). "Interpretation of Models of Fundamental Ecological Niches and Species' Distributional Areas." <i>Biodiversity Informatics</i> – although more general, this work is useful for understanding the ecological modeling approaches applied in GIS. 	

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Minor REVISION comments Is the language/English quality of the article suitable for scholarly communications?	Yes, the language/English is quality of the article suitable for scholarly communications	
Optional/General comments	<p>A Geographic Information System (GIS) can be a powerful tool for studying the spatial distribution of the cotton pink bollworm (<i>Pectinophora gossypiella</i>), a significant pest in cotton production. GIS helps in mapping, analyzing, and visualizing the spatial patterns of the pest population, environmental factors, and management strategies. Here's a guide on how to use GIS for this purpose</p> <p>Develop risk maps indicating areas susceptible to infestations. These maps help guide pest control strategies, such as targeted pesticide applications or biological control measures.</p> <p>Integrate GIS with pest management decision support systems to recommend actions based on current and predicted pest distributions.</p> <p>Optimizing pest management practices, predicting future infestations, assessing the impact of climate change on pest distribution, and aiding in sustainable cotton production.</p>	

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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