Review Form 3

Journal Name:	**Journal of Advances in Biology & Biotechnology**
Manuscript Number:	**Ms_JABB_126756**
Title of the Manuscript:	**POPULATION DYNAMICS OF ARTHROPODS IN GREEN GRAM [VIGNA RADIATA (L.)] AND THEIR CORRELATION WITH METEOROLOGICAL DATA AT JABALPUR DISTRICT OF M.P.**
Type of the Article	

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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Important Policies Regarding Peer Review

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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)*
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.	**This manuscript makes a valuable contribution to the scientific community by analyzing the population dynamics of various arthropods on green gram (*Vigna radiata*) and correlating these dynamics with meteorological factors in Jabalpur. Such studies are essential as they provide insights into how climate variables impact pest populations, which can inform pest management practices in green gram cultivation. By establishing specific correlations—such as between whitefly populations and wind speed, or jassid populations with humidity and rainy days—the manuscript offers practical information that could help predict pest outbreaks and optimize pest control timing.** **I appreciate this manuscript for its methodological approach, as it provides clear, field-based evidence of how weather conditions impact pest populations. However, a more in-depth exploration of the potential mechanisms behind these correlations, or the inclusion of more robust predictive models, could further enhance its utility to researchers and farmers.**	
Is the title of the article suitable? **(If not please suggest an alternative title)**	**The title "Population dynamics of arthropods in green gram [*Vigna radiata* (L.)] and their correlation with meteorological data at Jabalpur district of M.P." communicates the study's focus but could be made more concise and engaging. Here are a few options that might improve clarity and readability:** **1. Meteorological Correlations and Arthropod Population Dynamics in Green Gram (*Vigna radiata*) in Jabalpur District, M.P.** **2. Arthropod Population Dynamics in Green Gram (*Vigna radiata*) and Their Correlation with Meteorological Factors in Jabalpur District, M.P.** **Each of these alternatives maintains the original meaning while streamlining the phrasing to enhance clarity.**	

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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.	**The abstract provides key results of the study, but it could benefit from a few structural and content adjustments to enhance clarity and comprehensiveness.** **Original abstract**: Field experiment was carried out for the study of population dynamics of arthropods on green gram (*Vigna radiata* L.) at Jabalpur (M.P.) during kharif season 2022-23. The result revealed that the highest population of whitefly, jassid and ladybird beetle were observed in 37th standard meteorological mean (SMW) with the population of 6.87 adult / plant, 6.56 adult / 6 leaves and 0.76 adult / plant respectively. The highest population of yellow mosaic virus and damselfly were observed during 43rd and 40th SMW respectively, with the population of 22.87% and 1.83 adult / sweep respectively. Spider and dragonfly were during 41st SMW with the population of 0.36 adult / plant and 1.5 adult / sweep respectively. Correlation studies revealed that the whitefly showed significant positive correlation with wind speed and jassid showed significant positive correlation with evening relative humidity, wind speed and rainy days while dragonfly showed significant positive correlation with evaporation. Damselfly showed significant positive correlation with maximum temperature and ladybird beetle showed significant positive correlation with whitefly population. **Proposed abstract**: **This study investigated the population dynamics of arthropods on green gram (*Vigna radiata* (L.) R. Wilczek) and their correlation with meteorological factors in Jabalpur, M.P., during the 2022-23 kharif season. Results indicated peak populations for major pests such as whiteflies, jassids, and ladybird beetles around the 37th meteorological week, while yellow mosaic virus incidence peaked in the 43rd week. Notable correlations were found between arthropod populations and specific weather factors, with whiteflies showing a significant positive correlation with wind speed, and jassids with humidity, wind speed, and rainy days. Ladybird beetle populations were positively correlated with whiteflies, suggesting potential biocontrol relationships. These findings provide valuable insights into how climate variables influence arthropod populations, which can inform more targeted pest management strategies for green gram cultivation.**	
Are subsections and structure of the manuscript appropriate?	**The manuscript structure is generally appropriate and follows the standard scientific format. However, there are a few adjustments that could improve clarity and flow.** **Introduction: This section is appropriately placed and introduces the study's background, but it must also be written the objectives, and relevance.** **Materials and Methods: This section is essential and is well-placed, provides a fairly detailed account of the experimental setup and procedures, but some aspects could be clarified or expanded to enhance reproducibility and transparency.** **The Results and Discussion section has a mix of results for individual species (e.g., whitefly, dragonfly, damselfly), which is useful but could benefit of another structure.** **Conclusion: This section is well-placed, ideally summarizing the major findings and their implications for pest management in green gram cultivation. Consider briefly mentioning the broader applications or recommendations based on these findings.** **Materials and Methods**: The statement "All agronomic procedures were followed" could be elaborated. It would be beneficial to briefly state what specific agronomic practices were used, such as irrigation frequency or fertilization, to ensure clarity. It is clear that observations were recorded twice weekly on 25 randomly selected plants, which is a good frequency for studying population dynamics. For whitefly the use of a caging method is mentioned, but more detail on how this was done would be useful for replicability (e.g., size/type of cage, duration of observation). For ladybird beetle and spiders the counting of adults per plant was done visually or with a specific tool? The dragonfly and damselfly number were recorded "per 3 sweeps," but more detail on the sweep method would improve clarity (e.g., net size, or height from the ground etc.). Also, the source of meteorological data, such as a weather station or specific meteorological agency, is not mentioned. Adding this information would clarify how environmental data were gathered and lend credibility to the results. Details on the specific meteorological variables measured (temperature, humidity, wind speed, etc.) and their recording frequency would also be beneficial. The correlation and regression analysis approach is provided in mathematical detail, referencing Snedecor and Cochran (1967), which is appropriate for transparency and methodology. Consider Adding a Data Analysis Software - If software was used for statistical analysis (e.g. SPSS), it would be helpful to mention it. Replication and Controls: There's no mention of whether there were any control plots or if there were replications of the experiment across different fields or conditions. **Results and Discussion** 1. Pest Species 2. Predator Species 3. Correlation with Meteorological Factors This structure helps readers to quickly understand the ecological roles of each arthropod and how meteorological factors influence them.	

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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.	**The manuscript is scientifically and technically robust due to its clear experimental design, systematic data collection and adequate statistical analysis. The methodology carefully addresses the main objectives by using specific techniques to monitor each arthropod species in its natural environment without the interference of insecticides or protective measures. This approach allows an accurate assessment of arthropod population dynamics and their correlation with environmental factors, providing insight into the natural relationships between pests and predators in green gram cultivation.** **The manuscript also uses established statistical methods to analyze correlations between arthropod populations and meteorological data, ensuring that the results are reliable and statistically validated. By referring to standard statistical practices (e.g. Snedecor and Cochran) and by using appropriate observation frequencies, the study is founded on a sound methodological framework. Together, these elements make the manuscript scientifically rigorous, providing valuable and credible results for the management of arthropod populations in agricultural systems.**	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	**The references in this manuscript provide a foundational background for understanding the population dynamics of insect pests and their natural enemies in legume crops, with some focus on related crops like cowpea and black gram. Incorporating more recent studies from the past 2–3 years, especially those that address changing climatic impacts on pest dynamics, could strengthen the manuscript's relevance to current agricultural challenges. Adding recent studies that specifically address green gram (Vigna radiata) or similar environments (e.g., regions similar to Jabalpur or comparable climates) would make the literature more directly applicable to the study's objectives. Recent studies linking insect population dynamics with specific weather parameters would provide a more robust context for the manuscript's findings.**	
Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	**With minor adjustments to grammar, structure, and word choice, the language quality would align well with scholarly standards. Addressing these areas would make the manuscript easier to read and more suitable for publication in academic journals.** "Field experiment was carried out" could be improved to "A field experiment was conducted." "the result revealed" instead of "results revealed" and "are not used" should be "were not used." "Observation of jassid population was recorded on two leaves, uppers, middle, and lower per plant" could be made clearer "Jassid populations were recorded on two leaves per plant: one from the upper, middle, and lower sections."	
Optional/General comments		

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?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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