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| Journal Name: | Journal of Experimental Agriculture International |
| Manuscript Number: | Ms_JEAI_45677 |
| Title of the Manuscript: | Diversity of maize, cowpea and okra insect pests and influence of intercropping system on their major insect pests in the Cameroonian Guinean Savannah and Sudano Sahelian agro-ecological zones |
| Type of the Article | |

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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 guideline for Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

| | 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) |
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| <p>Compulsory REVISION comments</p> | <p>This manuscript requires editing to improve the grammar and correct spelling mistakes throughout. Typos are present throughout the manuscript, including apparently missing words and values and misspelled species and product names.</p> <p>The introduction requires more background on the theory explaining how intercropping should reduce pest insect abundance in these crops. As written now, the only justification for using intercropping as a pest control technique is that it has been shown to work in other systems. There should be some theory introduced that explains mechanisms for why intercropping these specific crops would reduce pest populations in this system.</p> <p>The introduction also needs more background information on the two sites where the study was carried out. As written, there is no information on the climate, soil, or other growing conditions of the two areas, how they differ from one another, how they might affect the pest insect communities or the effect of intercropping on reducing pest pressure.</p> <p>There is not enough detail in the methods section on the experimental layout. There is no information on the size of the individual plots, the size of the subplots, or the presence/absence of any buffers between plots. There should also be information about the surrounding environment, including adjacent natural, developed, and cropped land, since the results of this study depend on colonization of the experimental plots by insects from other sources.</p> <p>There is not enough detail present about the insecticide applications that were made. Why was cypermethrin used as opposed to other, available broad-spectrum insecticides? What was the spray rate, how was the chemical applied, and how often were sprays made? How did you ensure adequate coverage of multiple crop plants in the intercropped systems?</p> <p>The methods section lacks any kind of justification for why pest insects are being assessed with different methods for each crop, especially since insects are measured from maize once, but multiple times for the other crops. Furthermore, it is unclear what the authors mean by sampling the maize plants at "physiological maturity," but if this means that the plants were destructively sampled after senescence, then there were likely many different insect species that were missed from this survey. In essence, the survey of maize plants was limited to stem boring insects and species that inhabit the corn ear. Many other insects that feed on the plant during other growth stages were not sampled at all. Authors need to either state some justification for the vastly different sampling methods between crops, or state the limitations of their assessments.</p> <p>The identification of species as crop pests seems arbitrary. Authors state, "Classification of insects into 'major' and 'minor' pests was based on observations on the incidence, abundance and the degree of importance of the damage caused by these pests in the field," however this description is entirely too vague to give readers an adequate understanding of how determinations were made. There are no criteria stated for when damage becomes "important" and there are no apparent criteria for when populations of some insect species are significantly more abundant than other species. Furthermore, the authors do not describe any formal methods for measuring damage caused by different insect species to the different crops. For</p> | |



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| | <p>instance, there are several places where a species was determined to cause “serious damage” to a crop, however the damage levels were not obviously measured or reported, and there is not an objective measure of how serious the damage was. Similarly, there are claims that certain species reduced the yield of some of the crops, but again there are no yield measures reported, and no indication of how it was determined that any particular species was responsible for any yield loss.</p> <p>Calculating diversity indices for communities of herbivorous insects on different crop plants does not directly address any of the objectives stated in the introduction.</p> <p>The description of the statistical analysis lacks sufficient detail to understand how the analysis was carried out. Especially since there are two sites, two years of study, and a split-plot design with 7 apparent sub-plots per main plot, there needs to be more detail in the methods section to describe how each of these variables are handled in the analyses. However, based on the summaries of statistical outputs in the results section, it appears that individual plants were likely treated as replicates, rather than plots or subplots. This is apparent in some of the analyses of the effect of intercropping, where the values for degrees of freedom are 3198 for a t-test, when in the methods, the study was described as only having 4 replicates. This indicates that the analyses are likely pseudo-replicated, and therefore conclusions of this study may be based on erroneous analyses. Without more detail in the methods section on how the analysis was done, it is impossible to tell whether the values are correct or not.</p> <p>The discussion section apparently introduces new information on the abundance of natural enemies that was not reported in the results section. Although increasing abundance and activity of natural enemies could be responsible for some of the differences that were measured, typically it is inappropriate to introduce new results in the discussion section.</p> <p>The discussion section contains information on the climatic differences between the two study sites that should have appeared in the introduction. There are also hypotheses about the mechanisms for how intercropping might affect pest insect populations that should have appeared in the introduction.</p> | |
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| <p>Minor REVISION comments</p> | <p>More detail is needed in the abstract to describe the factors under investigation. "Use of insecticide" and "cropping systems" are too vague.</p> <p>There are no insect pests of okra described in the introduction along with maize and cowpea.</p> <p>Homoptera and Heteroptera are no longer recognized as orders; those taxa should be combined within the order Hemiptera.</p> <p>The tables do not indicate the sample unit for the number of plants that the insect counts refer to. Are they from a single plant? Multiple replicate plants? Entire plots?</p> <p>Why are results of the diversity indices not reported for maize?</p> | |
| <p>Optional/General comments</p> | <p>Keywords typically should not be terms that also appear in the title and/or abstract.</p> <p>Much of the information in the introduction about the nutritional quality of the crops under study is irrelevant to the current study.</p> <p>Study objectives and treatments should be written out as paragraphs, and not as lists within the manuscript.</p> <p>Evaluating the okra-cowpea intercropping system does not appear in the objectives.</p> <p>The term "insect community" should be used when describing the populations of multiple insect species simultaneously.</p> <p>References are made in-text to Figures 2 and 3, which do not exist in the manuscript.</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) |
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| <p>Are there ethical issues in this manuscript?</p> | <p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p> | |

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