Review Form 1.7

Journal Name:	**Asian Journal of Research in Botany**
Manuscript Number:	**Ms_AJRIB_95222**
Title of the Manuscript:	**CHLOROPHYLL CONTENT INDEX AND YIELD RESPONSES OF MAIZE AND BANANA PLANTS UNDER Calandra calothyrsus, Sasanian seaman and Leucaena divers folia INTERCROPPING IN VIHIGA COUNTY, KENYA**
Type of the Article	**Original Research Article**

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lac k of N o v elty'**, 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)*
Compulsory REVISION comments **1. Is the manuscript important for scientific community?** (Please write few sentences on this manuscript) **2. Is the title of the article suitable?** (If not please suggest an alternative title) **3. Is the abstract of the article comprehensive?** **4. Are subsections and structure of the manuscript appropriate?** **5. Do you think the manuscript is scientifically correct?** **6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.** **(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)**	**The title is related to our journal framework** **The entire manuscript must first be adjusted to the exact format of the journal.** **The abstract should be brief and useful. Rewrite the introduction.** **Literature review means what studies have been done on the topic and what are you saying now.** **All the equations must be numbered and then their references should be mentioned.** **All of them should be mentioned in the text.** **The research method and data collection method should be clarified.** **The figures space should be correction.** **References should be written based on APA and powered.** **Research limitations and suggestions for further studies should also be presented.** **The all text should be correction about grammar mistakes.**	

	Abstract is very long **ABSTRACT** **High population has led to more demand for food. Subsequently, there is need to expand agricultural land, necessitating cutting down of trees. This however, leads to soil degradation. Nutrient depleted soils and poor cropping systems such as continuous cropping, have contributed to the declining yield, which is a major problem facing farmers in Western Kenya. Intercropping with agroforestry tree species can alleviate soil infertility problems and increase crop productivity through enhanced biological nitrogen fixation, growth and photosynthesis hence ensuring food security. However, intercropping with agroforestry trees may lead to competition for both above ground and below ground resources between crops and trees hence affect the physiology and yield of the component crops. Intercropping maize and bananas with agroforestry trees such as Calliandra calothyrsus, Sesbania sesban and Leucaena divers folia have the potential to improve the physiology and productivity of both maize and bananas and as a result alleviate food insecurity. However, the influence of the agroforestry trees species on the physiology and yield of the crops is yet to be established. This study sought to investigate the influence of intercropping agroforestry tree species on maize and banana chlorophyll content index and yield. The field trials were set up at Maseno University farm in Vihiga County. Seeds of agroforestry trees were acquired from KEFRI – Muguga, planted in a seedbed and the seedlings raised in nurseries. Five months old Williams' variety tissue banana seedlings were obtained from KALRO-Thika. Hybrid maize seeds, H513 were bought from Kenya seed company Kitale. Banana holes were dug 90cm x 90cm x 60cm deep and 20 Kg of cow dung manure + 20 Kg of top soil + 200g of NPK fertilizer added before planting the banana at a depth of 0.3m for proper anchorage. Maize were planted at 0.75 m inter row by 0.3 m spacing. Randomized Complete Block Design with 3 replications and seven treatment levels (maize without fertilizer, maize banana Calliandra calothyrsus, maize banana Leucaena diversifolia, maize banana Sesbania sesban, maize-banana, banana monocrop and maize with fertilizer) were used. Fifteen maize and four banana plants in each treatment were sampled in a zigzag method and tagged for data collection. Data on plant chlorophyll content and yield (grain weight, banana bunch weight, banana number of fingers and finger length) were determined. Chlorophyll content index parameters were measured using SPAD meter, respectively on the 3rd fully sun exposed leaf of the tagged plants. Data collected from the study was subjected to analysis of variance using GenStat statistical package. Treatment means were also separated and compared using the least significant difference. There were significant increases ($P \leq 0.05$) in chlorophyll content and yield under maize + banana + sesbania sesban (MBS) intercropping. Bunch weight and finger length were significantly higher under MBS. These agroforestry trees enhanced chlorophyll content index and yield of maize and bananas. Therefore, intercropping of maize, banana and Sesbania sesban is recommended as it increased the yields of both maize and banana through improved chlorophyll content index. This study allows us understand the interaction mechanisms of the crops of maize and banana crops with the three agroforestry tree species to resources.** **Keywords: Intercropping, Agroforestry, Yield, Chlorophyll Content Index, Sesbania sesban, Calliandra calothyrsus, Leucaena diversifolia, banana, maize, Vichuga county**	

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Minor REVISION comments **1. Is language/English quality of the article suitable for scholarly communications?**		
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)*	

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