



SDI Review Form 1.6

Journal Name:	International Journal of Plant & Soil Science
Manuscript Number:	2014_IJPSS_11150
Title of the Manuscript:	Effect of intercropping on nitrogen fixation of three groundnut (<i>Arachis hypogaea</i> L) genotypes in the guinea savanna zone of Ghana.
Type of the Article	Original Research Article

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

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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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	<p>Things I would appreciate to see in the paper:</p> <p>(i) Botanical types in a table</p> <p>(ii) Tabular presentation of the growth characteristics of both Obatanpa and the 3 groundnut genotypes before the intercrop</p> <p>(iii) Maturity regimes of these groundnut genotypes</p> <p>(iv) Time of planting: were all the crops planted on the same day?</p> <p>(v) Was Soil tests done before? If yes then what are the differences now</p> <p>(vi) Maize and groundnuts seed sources (Were they first grade Foundation for groundnuts and fresh OPV seeds for Obatanpa or the one after many Cycles of savings). Remember, age/cycle of the crops affects performance</p>	<p>(i) <u>A simple description of the groundnut genotypes are included in the materials and methods to eliminate the need for tables.</u></p> <p>(ii) <u>The growth and yield of this genotypes and the maize in sole systems have been publish by other studies. We have appropriately referred to such publications in our article.</u></p> <p>(iii) <u>Information of maturity regimes has been included.</u></p> <p>(iv) <u>This information too has been included-planting of all crops was done on the same day</u></p> <p>(v) <u>Soil test was done before the experiment to give the baseline information. We did not carry out soil after the experiments for two reason: 1. We not looking at direct fixation into the soil, 2. We could not</u></p>

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	<p>(vii) When does the maize variety peak vegetatively? For instance, when the groundnuts had 50% and 75% anthesis, what was the stage of maize? Were they at the same stages too?</p> <p>Mere mentioning (pages 108 and 109) that the climate, vegetation and soil characteristics of the experimental site are described in earlier report do not help the readers of this paper. Please give a brief findings of Konlan et al., 2013a</p> <p>Results For clarity and ease of following, the table of results should be brought to this section as they are discussed</p> <p>Conclusion part Generally, lower plant densities led to bigger plants with wider canopies which then translated into higher dry matter production per plant in both years (pages 371 and 372). So wider spacing in this experimental arrangement could have translated into higher pod and dry matter yield</p> <p>Increasing groundnut population density therefore led to slight reductions in canopy size (pages 360 and 361). What is the optimum plant density then</p>	<p><u>incorporate the residue to determine its actual nitrogen contribution. We only set out to estimate the potential for the new genotypes</u></p> <p>(vi) <u>Information on the sources of the maize and groundnut seed has also been added in the materials and method.</u></p> <p><u>A brief description of the climate and soil of the site is now included in the materials and methods</u></p> <p><u>Results</u> <u>The preparation of the manuscript follows standard procedures outline by the journal. The authors are of the opinion that this article is clear enough and easy to read in its current state. We are also aware that journal editorial team will insert this tables and figure a the right places when preparing a galley</u></p> <p><u>Conclusion</u> <u>This is not necessarily the case in groundnut. Wider spacing will give you higher pod yield per plant lower yield per unit area. This is because the relatively lower pod yield per plant observed in close spacing is more than compensated for the</u></p>
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	<p>in this experimental design? I need to see this clearly in the conclusion</p> <p>Groundnut responds well to residual nitrogen not direct application. What was the previous crop(s) in that field? Was there any fertilization before this experiment? You need to capture this in the methodologies.</p> <p>I wish there were staggering of planting dates in this study e.g planting maize later post emergence of groundnuts. After full establishment, maize root systems are aggressive and grow extensively since post anthesis there will be no more roots growth and the developing/growing cob will solely depend on the anchoring already established earlier. So the groundnuts next to the maize plants could have been affected much. I wish there were differential recordings of data on the groundnut near and far away from the maize plants in the intercrop instead of the average presented</p>	<p><u>yield obtained from the additional plants per unit area.</u></p> <p><u>It is also a well established fact that groundnut equally respond well to N as a starter. It based on this knowledge that farmers in the poorest (soil) zones of the savannas are encouraged to supply a starter N to the groundnut. Information on previous cropping is now captured in the materials and methods</u></p> <p><u>We did not stagger our planting. Our experiment was not designed to study such effects. It is an excellent idea that begs investigating though.</u></p> <p><u>Yes, the groundnut next to maize may have been affected by root completion. But it is known that groundnut is affected more by shading effects of the intercrop partner than by completion for water and nutrients. Those plants next to maize was therefore probably affected by a cocktail of additional factors such as shading, temperature difference, airflow & humidity etc., and their relationships with diseases and pest. A lot of work is required to determine the contributions of these individual environmental factors (whether negative or positive).</u></p>
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<u>Minor</u> REVISION comments	Was there any staggering of the planting dates e.g 2-4 weeks after groundnuts	<u>No, there was no staggering</u>
<u>Optional/General</u> comments	Well written paper	<u>Thanks</u>