



SDI Review Form 1.6

Journal Name:	American Journal of Experimental Agriculture
Manuscript Number:	Ms_AJEA_20072
Title of the Manuscript:	Contributions of Rhizobium Inoculants and Phosphorus Fertilizer to Biological Nitrogen Fixation, Growth and Grain Yield of three Soybean varieties on a Fluvic Luvisols
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.

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(<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	1) The purpose of this experiment that inoculation and P application may improve nitrogen fixation and seed yield of soybean is good. However, as shown in the manuscript, inoculation of commercial inoculant had no effects on soybean growth, nodulation, and nitrogen fixation. The author should discuss why the inoculation was not effective. There are many reasons, such as ineffective inoculant, soil indigenous rhizobia is enough or dominate over inoculant etc. I recommend to use several types of inoculants rather than one inoculant. Also inoculate activity should be tested by sterile cultivation of soybean. 2) The effect of P fertilizer application was obvious to promote nodulation, nitrogen fixation and seed yield. This is due to low P level in the soil. The author showed the differences of PUE among three varieties, please explain why these difference occurred. Such as root structure, infection of AM fungi, root P absorption activity etc. 3) Table 3 The author showed the nodule number (no/plant) and the values are 1.37 etc. I believe nodule number of soybean is generally 100-500 per plants and not 1-2. The dry weight of nodules shows	1) There reasons why the inoculant did not work which was captured in the manuscript were first of all the soil analysis done revealed that all the nutrients were limiting in the soil and the law of minimum comes into play (i.e. this law states that the yield from a farmer's field is always limited by a single factor—yield will increase only when that factor is improved) Secondly, the indigenous native rhizobia was abundant in the soil and so dominate over the introduce strain The recommendations are well taken and would be implemented in my subsequent work 2) The reason was attributed to the difference in root structure of the three soybean varieties and root P absorption activity as stated in L 326, L 327, L 228, L329, L330, L331 and L 332



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	about 2g, indicates several hundreds nodules.	3) the nodule number data was transformed by using log 10 to the base 10 and it is stated in the materials and methods in line 139
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		