



SDI Review Form 1.6

Journal Name:	American Journal of Experimental Agriculture
Manuscript Number:	2013_AJEA_6011
Title of the Manuscript:	Factors influencing Soyabean production and willingness to pay for inoculum use in northern Ghana
Type of the Article	Research Paper

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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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	I think that the introduction is too long and provide information that is not necessary. If the important issue is willingness to pay, the authors should provide more insights in this direction. They should refer to the importance of the inoculum. There is a long discussion on conservation issues related to the use of inputs; however, it is not reflected in the objectives. This confuses the reader on what is the relevant issue related to soybean cultivation. How are the authors going to identify adoption of legumes if the samples is composed only by legumes producers. The production function will not respond the first objective. An adoption model approach should be used in this case. The production function will determine the factors the affect more productivity, which is not related to the main topic. The variables used in the production model are not the variables of a production function. Economic theory do not sustain this. Willingness to pay and productivity, the two estimated equation are clearly related, variable x8 is endogenous in the first model. This issue should be taking into account in the estimation procedure. I do not see the difference between table 3.1. and 3.2. In the methodology all farmers were soybean producers, and now there is a separation in two groups? This is not clear and also should only table.	The introduction is not too long. It sets the background regarding the importance of biological nitrogen fixation through inoculum application in soyabean production. It will be inappropriate, in our opinion, to jump to inoculum without setting the stage, as it were. We, however, agree that we need to provide some information on the importance of inoculum which has been done in the revised version of the manuscript. The N2 Africa project introduced the use of inoculum to some soyabean farmers (not all farmers), so it was possible to get some counterfactuals to be able to run the WTP model. Again, the fact that they were all legume producers does not mean they will all be willing to pay for the use of inoculum. It is wrong for the reviewer to talk about adoption of legumes....since the study is not about that. We are looking at factors that affect soyabean production and those that affect farmers' willingness to pay for inoculum. The production function approach responds directly to the first objective, contrary to the assertion of the reviewer. We acknowledge the absence of some factors of production like land, seed



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	I do not see clearly how the authors are really going to extract willingness to pay? This will be only a perception analysis, which in the case is subject to strong self selection bias. The authors stated in the introduction that they are going to derive policy implication, which are not discussed in the manuscript. They only provide results without discussion.	and labour (which have been added in the revised manuscript). However, for the reviewer to indicate that variables such as farming experience, educational level, extension contact, income, etc, are not variables to be found in a production function is to suggest that they do not influence production decisions and as such farm output. We do not agree with this position and strongly maintain that apart from physical inputs (land, labour and capital) which are used to demonstrate a classical production function in classrooms, critical farmer characteristics and policy variables are very important and are used in empirical estimation of production functions. The production function and WTP models/equations are related and there is nothing wrong with that. Some of the variables that might affect soyabean output can also affect farmers' willingness to adopt and pay for a technology like inoculum. We do not agree that the variable X8 (use of inoculum last season) is endogenous. It is just like use of credit in production or any other technology. To the best of our knowledge, an endogenous variable is "a factor in a causal model or
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		causal system whose value is determined by the states of other variables in the system”. As can be inferred from the above definition, use of inoculum by a farmer during the previous season was not determined or affected by any other variable (s) in the same model. It was supplied by a project and it is clearly an exogenous variable. We did not extract willingness to pay. A simple binary choice model approach was used to assess willingness to pay as has been done severally in the adoption/WTP literature. We disagree that this is a perception analysis which is strongly influenced by self-selection bias. We are dealing with soybean farmers who have seen and some have used inoculum before. Their decision regarding their willingness or otherwise to pay for it is clearly objective rather than subjective. In the revised manuscript, some additional discussions on the economic and policy implications of the results have been provided. Mindful of the limitation on the length of the manuscript, this discussion has been synthesized and summarized.
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<u>Minor</u> REVISION comments	Are in the PDF	
<u>Optional/General</u> comments	The methodology is not adequate. It does not respond to the objectives, there are endogeneity issues, variables selection issues and self selection bias on the way the authors established the survey.	We strongly disagree that the methodology is not adequate. There are no endogeneity issues, or serious self-selection bias as explained above. The sampling methodology adopted reduced such biases to the barest minimum, if any. The only modification in the methodology in the revised manuscript is the addition of three more variables (land, labour and seed) to the production function.