



SDI Review Form 1.6

Journal Name:	Journal of Advances in Microbiology
Manuscript Number:	Ms_JAMB_48897
Title of the Manuscript:	Competitiveness among Rhizobia for Nodulation of Introduced Leguminous Tree Gliricidia sepium in a Sub-Saharan Sandy Soil
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:

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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)
<p>Compulsory REVISION comments</p>	<p>General comments:</p> <p>This work has some novelty. The authors proved that indigenous species are suitable to be used as inoculant of <i>Gliricidia sepium</i> in Senegal, presenting more competitiveness than other commercial rhizobial strains. Nevertheless, the authors did not duly explain the importance of their work, and in my opinion the results are not clearly presented. The authors were not careful with the writing of the paper and so I advise an edition of English. Despite all this, many references are missing, and some phrases have been plagiarized from other articles. So, I advise major revisions before accepting the paper in Journal of Advances in Microbiology.</p> <p>Specific comments:</p> <p>Introduction: In the sentence "Unfortunately, to overcome this problem, the use of expensive chemical fertilizers contributes to the pollution of groundwater and constitute a real public health problem." I suggest a change to: Unfortunately, to overcome this problem, the use of chemical fertilizers is increased, which contributes for the pollution of groundwater and constitute a real public health problem.</p> <p>In the sentence "Thereby, improving soil fertility has been a major joint concern for policy makers and local farmers." I suggest a change to: Thereby, improving soil fertility in a sustainable way has been a major joint concern for policy makers and local farmers.</p> <p>Add references to these sentences: "From then on, agroforestry systems based on legume plants are increasingly being developed. In addition, successful legume inoculation is known to raise the amount of N fixed and improve agrosystem management. There has been increasing evidence that the rhizobial inoculation biotechnology have an important role in the development of sustainable agriculture." "....., is introduced in Senegal with rhizobial reference strains." "This fast-growing perennial tree is integrated into farming multipurpose cropping system for soil nutrient enrichment through N₂-fixation. For playing its expected role, plant seedlings have to be inoculated with effective rhizobia". "Rhizobial bioinoculants fail to nodulate their host mainly because of highly competitive indigenous rhizobia capable of nodulating the same legume species. Indeed, depending on the environment, a legume could select its preferential rhizobial partner in order to establish symbiosis."</p> <p>Make a reference to the law that approved the introduction of the legume tree <i>Gliricidia sepium</i> in Senegal, as well as its inoculation with TAL1769 and TAL1770 rhizobial symbionts. Explain clearly the reason to choose this plant species to introduce in Senegal soils. This important to understand if the results of this work could be easily applied to the field.</p> <p>In the sentence: "Thus, Acosta-Duran and Martinez-Romero [3] detecte in <i>G. sepium</i> nodules diverse rhizobial strains, in this case <i>Sinorhizobium</i> spp., <i>Rhizobium tropici</i> and <i>Rhizobium etli</i>, depending on the soil sampled." I</p>	



	<p>suggest a change to: Acosta-Duran and Martinez-Romero [3] identified diverse rhizobial strains that induce nodules in <i>G. sepium</i>, namely <i>Sinorhizobium</i> spp., <i>Rhizobium tropici</i> and <i>Rhizobium etli</i>, depending on the soil sampled...</p> <p>In the last sentence, specify the strains of <i>Sinorhizobium</i> spp., <i>Rhizobium tropici</i> and <i>Rhizobium etli</i> that induced nodules in <i>G. sepium</i>.</p> <p>In the sentences: "Previous studies described the presence of these rhizobial species in Senegalese soils [4,5]. Giller and Cadisch [6] reports that if large populations of compatible effective rhizobia are present, then responses to inoculation will often not be found using standard available inocula." I suggest a change to: Different studies described the presence of these rhizobial species/strains in Senegalese soils [4,5]. In fact, Giller and Cadisch [6] reported that if large populations of compatible effective rhizobia are present in the soil, then the responses to inoculation will often not be found using standard available inocula.</p> <p>The sentence "the success of artificial inoculation depends on the competitive capacity of the newly introduced strain to colonize nodulation sites in the presence of native strains....." is the integral copy of the author Boughribil et al. 2018 in the paper : "Effect of Competitiveness on Nodulation and Nitrogen Fixation in Common Bean (<i>Phaseolus vulgaris</i> L.)".</p> <p>The sentence "Triplett [8] indicated that a high competitiveness of inoculation strains in comparison with native rhizobia strains is as important as the effectiveness of symbiotic N₂ fixation itself. Is almost the copy of the "Triplett (1990) indicates that a high competitiveness of inoculum strains is as important as the effectiveness of symbiotic nitrogen fixation itself." found in the paper Castro et al. 1999 (Nodulation in peanut (<i>Arachis hypogaea</i> L.) roots in the presence of native and inoculated rhizobia strains).</p> <p>In the sentences: Triplett [8] indicated that a high competitiveness of inoculation strains in comparison with native rhizobia strains is as important as the effectiveness of symbiotic N₂ fixation itself. The objective of this study is to evaluate the nodulation ability of introduced foreign strains relative to the native rhizobial population in order to produce inoculum for growing legumes gliricidia." I suggest a change to: Triplett [8] indicated that a high competitiveness of soil inoculated strains in comparison with native rhizobia strains, is so important as the effectiveness of the symbiotic N₂ fixation itself. The objective of this study is to evaluate the nodulation ability of introduced foreign strains relative to the native rhizobial population, in order to obtain an inoculum for growing legumes gliricidia in Senegal."</p> <p>Material and Methods Do not start the paragraph with this sentence "Height nodules per plant were randomly collected from gliricidia root systems, 45 days after planting. PCR amplification of 16S – 23S rDNA Intergenic Transcribed Spacer region of the rhizobium which has induced nodulation was performed on nodules." Include this sentence in the paragraph, since the authors explain all the procedure after this sentence. This sentence seems a resume of the procedure.</p> <p>Results Is possible to see that the figures are cut. In my opinion is better to live a</p>	
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	<p>white bar between the wells of the gel. At least between were the cut really happen. In this way, everybody could understand that between the marker and the samples exist more wells.</p> <p>Correct the legend of figure 2. Namely, A and B for inoculated strains TAL1769 and TAL1770, respectively. This sentence is not very clear: “The occupancy rate of the nodules for each strain were determined when compared the number each profile to the total number of profiles.” Besides, I think here the authors need to explain better how determine the occupancy rate, to be clear for all readers of the paper.</p> <p>In my opinion is important to the reader know exactly which strains corresponds to the A to H restriction profiles, as well as is symbiotic effectiveness. At least the strains TAL1769 and TAL1770, since de other are indigenous and could not be cultivated.</p> <p>Discussion and conclusion, not discussion et conclusion.</p> <p>Add a reference to this sentence: “Domestication of foreign legume species into a new geographical area is generally made with effective nodulating rhizobia strains. This practice has been observed for several species of agronomic or forest interests.”</p> <p>This sentence is not clear: “Thus, two rhizobial strains from the Hawaii NifTAL collection (Hawai/USA) were available to the collection of the Dakar laboratory of microbiology (LCM) for inoculation of G. sepium plants from America.”</p> <p>Change intergene to inter-gene.</p> <p>This sentence is not clear: “The profiles of foreign and indigenous strains are found indifferently in nodules treated gliricidia nodules indicating that the ability to induce nodulation of the legume for the two reference strains was not similar.”</p> <p>Many works and not “Many work have....”</p>	
<p>Minor REVISION comments</p>		
<p>Optional/General comments</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)
<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>	
<p>If plagiarism is suspected, please provide related proofs or web links.</p>	<p>Some sentences of the introduction are copies of other papers. The sentence “the success of artificial inoculation depends on the competitive capacity of the newly introduced strain to colonize nodulation sites in the</p>	



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	<p>presence of native strains.....” is the integral copy of the author Boughribil et al. 2018 in the paper : “Effect of Competitiveness on Nodulation and Nitrogen Fixation in Common Bean (Phaseolus vulgaris L.)”.</p> <p>The sentence “Triplett [8] indicated that a high competitiveness of inoculation strains in comparison with native rhizobia strains is as important as the effectiveness of symbiotic N2 fixation itself. Is almost the copy of the “Triplett (1990) indicates that a high competitiveness of inoculum strains is as important as the effectiveness of symbiotic nitrogen fixation itself.” found in the paper Castro et al. 1999 (Nodulation in peanut (Arachis hypogaea L.) roots in the presence of native and inoculated rhizobia strains).</p>	
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Reviewer Details:

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