

Dear Editors and Reviewers,

Thank you for your further comments on our manuscript entitled “Inducing Banana Fusarium Wilt Disease Suppression through Soil Microbiome Reshaping by Pineapple-Banana Rotation Combined with Biofertilizer Application” (Manuscript No: soil-2021-52). We are deeply sorry for our carelessness about the scientific expression. We have carefully dealt with the comments point by point this time. The responses to your comments are listed as follows. In addition, Waseem RAZA, a foreign expert of this field in Utrecht University, has revised the expression and grammar of the whole article. All modifications have been marked in red. The manuscript has certainly benefited from these insightful revision suggestions. We hope that these revisions successfully address your concerns and requirements.

Thank you and best regards,

Sincerely yours,

Rong Li

College of Tropical Crops,

Nanjing Agricultural University, Nanjing, 210095, P.R. China

Reply on Reviewer:

Authors need a clearer analysis and precise description of the paper. Some written errors must be noticed. The writing of technical terms must be corrected. Major revisions are recommended for the manuscript.

Some written errors in the original manuscript still appeared in this modified version. I hope authors to have the right attitude, check the whole manuscript carefully, and cherish every opportunity of amendment.

PS. The language expression and the grammar still have many problems. I suggest authors to consult professional personage, not only someone who is good at English, to study how to make the expression of logic to be more clear.

Answer: We are deeply sorry for our carelessness about the scientific expression. We have carefully dealt with the comments point by point this time. In addition, Waseem RAZA, a foreign expert of this field in Utrecht University, has revised the expression and grammar of the whole article.

I have the following substantive comments and the detailed comments were in the manuscript:

Line 66, “Among the management strategies,” maybe better?

Answer: Thank you very much for your comments. We have corrected it. Furthermore, we rewrote the whole sentence as “Among the management strategies, chemical pesticides are optimally effective against soil-borne plant pathogens, but this strategy is environmentally hazardous, and not only causes soil and water pollution but also induces the emergence of drug-resistant strains (Le et al., 2016).”

Line 75, My understanding is replacing “investigated” with “developed” should be better. And “a *Bacillus* strain” should be “the *Bacillus* strain”.

Answer: Thank you very much for your comments. We have corrected it.

Line 77-80, simply “investigated”? I think the meaning you want to express is that your previous results also showed that the biofertilizer promoted banana growth and control the *Fusarium* wilt. Therefore,

This part should rewrite.

Answer: Thank you very much for your comments. We rewrote this part as “ In our previous study, we developed a biofertilizer containing the *Bacillus* strain isolated from the rhizosphere of a continuously cropped banana that promoted plant growth and suppressed the banana *Fusarium* wilt (Shen et al., 2015; Fu et al., 2016; Fu et al., 2017). Therefore, biofertilizer application is a practicable and worthy measure for banana *Fusarium* wilt suppression.”

Line 82, changing “because” into “and”.

Answer: Thank you very much for your comments. We rewrote this sentence as “In addition, crop rotation is also considered a highly efficient and environmentally friendly alternative method in soil-borne disease control (Krupinsky et al., 2002).”

Line 84-85, ", however, this effect can control soil-borne diseases." is better?

Answer: Thank you very much for your comments. We rewrote this sentence as “Crop rotation breaks the microflora and chemical characteristics of continuously mono-cropped soil leading to the control of soil-borne diseases (Christen and Sieling, 2010; Yin et al., 2010).”

Line 90-92, Our previous work showed that the effect on banana Fusarium wilt disease prevention and control of banana-pineapple rotation was close to bio-organic fertilizer application?

Answer: Thank you very much for your comments. We rewrote this sentence as “In our previous study, besides biofertilizer application, our work also showed that the banana-pineapple rotation efficiently suppressed the banana Fusarium wilt disease (Wang et al., 2015).”

Line 138, “NH₄⁺-N” should be “NH₄⁺-N ”.

Answer: Thank you very much for your comments. Sorry for our carelessness, we rewrote it as “NH₄⁺-N”.

Line 375-383, “p” should write in italics. Please check it in the whole text.

Answer: Thank you very much for your comments. Sorry for our carelessness, we have corrected it and checked the whole text.

Line 397-399, Why was highly, compared with what? If you want to tell us the combined control methods can improve the effect, you must emphasize this effect is compared between the single method and the combined method.

There many problems as this in this paper, which expression of logic were unclear. Please check it.

Answer: Thank you very much for your comments. We have corrected it as “Similar to our results, Shen et al. (2018) reported that bio-fertilizer application after fumigation with lime and ammonium bicarbonate revealed higher effectiveness in controlling banana Fusarium wilt disease compared to bio-fertilizer application or fumigation only.”

Meanwhile, we have checked the full text and improved the expression, please see the red-marked parts in the track-changes Manuscript.

Line 401-404, "It was consistent with this paper." This is "discussion", not "introduction".

Answer: Thank you very much for your comments. We have corrected it.

Line 500-502, What is the "bacterial and fungal structure"? bacterial and fungal community structures?

This sentence express unclear. Please rewrite it.

Answer: Thank you very much for your comments. We rewrote this part as "Annotation information from all generalists found in our study shows that bacterial OTU2 and OTU3013 belong to *Burkholderia*, which were generalists in the PBIO but not in POF and BOF networks. The linear model analysis also shows that *Burkholderia* relative abundance constrained disease incidence with a higher relative importance factor of 10.17%."

Line 505-508, Thus, even though the relative abundance of Burkholderia in the PBIO treatment was not that high, its change in network structure may have been attributed to the general wilt suppression activity, which is the special functions of Burkholderia.

Answer: Thank you very much for your comments. We have corrected it.

Line 519-521, what community structure was changed? how to change? change to be simpler or complex, or what? "conclusions" must be concise but specific.

Line 523-525, The same problem.

"5 Conclusions", I suggest this part should rewrite.

Answer: Thank you very much for your comments. We rewrote the "5 Conclusions" part as "This study was an expansion of our previous work. The results revealed that

pineapple-banana rotation combined with biofertilizer application during the banana season effectively reduced the *Fusarium* spp. abundance and banana Fusarium wilt. Both bacterial and fungal taxonomic and phylogenetic α -diversity was increased by rotation and biofertilizer application. Between the two strategies, biofertilizer application affected both bacterial and fungal community composition more predominantly compared to rotation. A higher percentage of *Fusarium*-related fungal phyla was observed compared to bacterial. More specifically, the potentially beneficial *Burkholderia* genus may attribute to the general wilt suppression activity for its important role in network structure and its high relative importance in linear models. Pineapple-banana rotation combined with biofertilizer application has strong potential for the sustainable management of banana Fusarium wilt disease."