Response to Reviewer 2 Comments

Dear Reviewer, thank you so much for your arduous labor. Your valuable suggestions have greatly helped us improve the quality of our article. We have made revisions based on your suggestions and hope to receive your approval.

Point 1: Line 18-19: "The lack of a mature embryo regeneration system for tree peony (Paeonia ostii) limits its industrial development" – in my opinion this sentence does not bring nothing it suggest that this species has the reproductive problems, if this is true, Authors should to explain it more clear.

Response 1: Thank you very much for your comments. We have deleted it.

Point 2: Line 23: "… tree peony embryos" – do you mean "somatic embryos"? it should be clarified.

Response 2: Thank you very much for your comments. We have modified it.

Point 3: Line 33: "increased ratio of IAA to other hormones" – it is better to specify the PGRs (plant growth regulators) and do not use the term "hormones" but PGRs or phytohormones.

Response 3: Thank you very much for your comments. We have modified all the errors throughout the manuscript.

Point 4: Keywords: Should be in alphabetical order and more specifically to the aim of work.

Response 4: Thank you very much for your comments. We have replaced and sorted the keywords.

Point 5: Line 42-43: information about the peony should be supplemented, there are several reports about the medical use of oils, and other secondary metabolites of this beautiful plant.

Response 5: Thank you very much for your comments. We have added relevant references to support our work.

Point 6: Line 63-65 : "Because this breeding method relies on a mature tissue culture regeneration system, it is crucial to construct a somatic embryo regeneration system for tree peony." – I do not understand why it so important and why the regeneration system could not be based on the organogenesis? If the Authors consider genetic stability in this context it should be clarified.

Response 6: Thank you very much for your comments. Indeed, it is based on the consideration of genetic stability. We have made the modification accordingly.

Point 7: Line 66: "The tree peony tissue culture regeneration system is not yet mature" – "mature" is not suitable for this reason, please verify is.

Response 7: Thank you very much for your comments. We have modified it.

Point 8: Line 73: "embryonic", "embryonic" – should not be "embryogenic"?.

Response 8: Thank you very much for your comments. We have revised it to "embryogenic" and checked the full manuscript for consistency.

Point 9: Line 97-107: all this information presented here are of result and conclusion meaning but here is the place to put the research objective, the aim of the experiments, please correct it.

Response 9: Thank you very much for your comments. We have revised that part of the content.

Point 10: Line 248-264: Morphological and Anatomical Observations – in this chapter there is lack of more particular cytological information for example, the good marker of morphogenic potential is the presence of extra cellular matrix (ECM), did you observe it? I would question the comparability of the callus mass (Quantitative analysis of embryogenic callus cell mass), there is no information about the size of the calluses clamps taken for measurement. I did not find information about the standardization of these activities. Please complete this.

Response 10: Thank you very much for your comments. We have supplemented and improved that part in the Materials and Methods section and Results section, and added relevant literature on the identification of non-embryogenic and embryogenic callus in tree peony.

Point 11: Line 375-376: "increased ratio of IAA to other hormones" – it is better to specify the PGRs (plant growth regulators) and do not use the term "hormones" but PGRs or phytohormones.

Response 11: Thank you very much for your comments. We have revised it throughout the manuscript.

Point 12: Line 480-487: Morphological and Anatomical Observations – like in Line 248-264 (Results).

Response 12: Thank you very much for your comments. As Point 10, we have supplemented and improved that part in the Materials and Methods section and Results section, and added relevant literature on the identification of non-embryogenic and embryogenic callus in tree peony.

Point 13: Figure 10. embryogenic callus or embryonic callus – should be verified.

Response 13: Thank you very much for your comments. We have revised the inappropriate annotations in Figure 10.

Point 14: The manuscript needs slight English correction.

Response 14: Thank you very much for your comments. We have polished the grammar and wording throughout the manuscript.