

RESPONSE TO REVIEWERS

Referee #1

We are pleased to notice that this re-submitted version sufficiently addresses our major concerns. Mainly, the slightly overstated title and conclusions were toned down a bit, making them more aligned with the strengths and limitations of this research. The presented results, embedded in the greater context of the other studies of the same group, offer a good starting point for unraveling the role of *T. melanosporum* in the fungal community of black truffle brûlés. From this foundation, the experimental setup and scope of the analysis can be tweaked to further enhance the clarity of the results.

At this stage we do not find any additional major issues with this manuscript, but the text could really benefit from a more detailed explanation of the network analysis with the SPIEC-EASI algorithm. Luckily the authors already provided this in the direct reply to our comments. To enhance readability and allow others to follow this pivotal analytical step of the study, we urge to authors to include a concise version of that specific part of their reply in the manuscript. Some additional minor corrections and suggestions for phrasing are listed below.

- I. 26: „dominance“ - change for less strong word, maybe abundance?
- I. 36: “the black truffle mycelium spreads the area around the colonised trees” – spreads is good correction, just needs a preposition to complete the sentence, eg. “spreads throughout”
- I. 79: “species” - is your metabarcoding data enough to fully resolve to the species level? Maybe also refer to OTUs here.
- I. 86: “nutrient’s mobilization” – should simply be “nutrient mobilization”
- I. 114: “lifestyle” – should be lifestyles
- I. 155 “physical-chemical” – should be “physico-chemical”
- I. 184 “fungal database nature”- hard to understand what this term means. “Nature of the fungal database?”
- I. 402 “may also influence. “ ... the results / ... the outcome
- I. 412 see I. 36 – “spreads throughout”
- I. 418 “...abundance negatively correlated with...” – should be “...abundance was negatively correlated with...”
- I. 423 “...plantations and forest, probably because...” – either both “plantation and forest” singular or both plural

We thank the reviewer for the constructive feedback and helpful suggestions. We have carefully addressed all the points raised. Also, a concise explanation of the SPIEC-EASI algorithm and its interpretation has been incorporated into the 2.3 section of *Materials and Methods* to enhance clarity and readability.

Referee #2

In my opinion, the revision greatly improved the manuscript, which now reflects more faithfully what was done and what happened in the experiment. I would just point out two minor grammatical issues:

L154 analised

L412 it spreads the soil

We thank the reviewer for the helpful feedback. The two suggested grammatical corrections have been carefully implemented in the revised manuscript.

LIST OF CHANGES

Point in revised manuscript	Description of change
L26	Changed “dominance” to “abundance”
L36	Added “throughout” after “spreads”
L79	Changed “species” to “OTU”
L86	Changed “nutrient’s mobilization” to “nutrient mobilization”
L114	Changed “lifestyle” to “lifestyles”
L154	Changed “analised” to “analysed”
L155	Changed “physical-chemical” to “physico-chemical”
L184	Changed “fungal database nature” to “nature of the fungal database”
LL187-190	The phrase “In the resulting networks...in all samples” was added to provide a concise explanation of the SPIEC-EASI algorithm and its interpretation.
L407	Added “results” after “influence”
L416	Added “throughout” after “spreads”
L423	Added “was” after “abundance”
L426	Changed “forest” to “forests”