

Editor comments are in blue, our responses are in black.

13 Jan 2026) Associate editor decision: Reconsider after major revisions by [Daniel S. Goll](#): Public justification (visible to the public if the article is accepted and published):

Dear Arthur et al

thanks for the revision, I realized you missed to answer to two points raised by the reviewers. I used the major revision button for technical reason ( in order to continue as major revision ( after these two minor additions ).Can you please add the response to the following points: (1) Further discussion about why there are seasonal differences in the mustard yield results would be beneficial- particularly why the combined treatment is higher than biochar or basalt alone in the first season, and why that changed in the second harvest. Overall yield levels don't seem to vary between the two seasons so a seasonal effect seems unlikely.

-> please indicate that/how the manuscript reflects the unclear cause of the effect.

In the previous iteration, we commented the following to this question:

Interesting comment, one option that could explain the higher yield for mustard in the combined basalt-biochar treatment relative to the biochar-only treatment in the first harvest but not in the second harvest could be a short-term nutrient retention of basalt-released nutrients by biochar. By the second harvest, these nutrients may have been depleted or leached, reducing the synergy effect. However, this is a speculative explanation and we therefore wish to leave this interpretation out.

**We clarify here and in the discussion of the manuscript that the cause of this effect was unclear:** Added in **line 391**: Mustard yield was higher in the combined basalt + biochar treatment than in the single-amendment treatments in the first harvest, but this difference was not observed in the second harvest. Because overall yield levels did not differ between harvests, a general seasonal effect appears unlikely. The mechanism underlying this transient response in the combined treatment remains unclear.

(2) I am not in favour of using a linear model here as observations often show an exponential behaviour of change in weathering rates, cation leaching etc in the initial phase of ERW experiments. Please explain why you chose the linear model above other approaches.

-> please provide justification

We used linear mixed-effects models (lmer) to account for the repeated-measures structure of the data and to test the fixed effects of basalt, biochar, and their interaction, with experimental unit as a random effect. Although weathering dynamics may initially show an exponential behavior, a linear model is more appropriate for our dataset with low temporal resolution. Given the limited number of sampling points, simpler linear models reduce the risk of overfitting.

We added this to the method section in **line 219**: Although weathering dynamics may initially show an exponential behavior, a linear model is more appropriate for our dataset with low temporal resolution. The mixed linear model was fitted using the lmer function from the lme4 package, after which a multiple anova was done using the anova function from the car library in R.