RESPONSE TO REVIEWER' S COMMENTS (*second round of revision***)**

Dear Reviewer, Professor Hallett,
We appreciate your work and time that you spent reviewing our manuscript. Thank you for your comments – both those presented in the publishing system and those that were written directly in the text of the paper. In the revised version of the manuscript, we tried to take into account all your comments and suggestions. We realize the paper needed changes, and we are glad to be able to continue in the review procedure.

Authors

Reviewer #1 (Professor Paul Hallett):

The authors have addressed many comments of the reviewers in a substantially revised manuscript. The significance of the science is now clearer and the results are easy to follow. There are some short-comings that remain to be addressed.

The impressive array of soils sampled and their characterisation demonstrates very good science. I don't think that the novelty of such a diversity of sites, the full penological characterisation, and the value of measures such as glomalin are adequately introduced in the introduction.

There is some good text in the Discussion with clearly researched arguments to describe trends that were observed. Some of the basic description of wetting agents and soils that appears here needs to come earlier so that readers are aware of treatment selection. Lime application to D-I (which should be checked and not put in as speculative text), for instance, needs to be apparent before the Results are described.

The other major issue is that the text remains quite difficult to follow. It could be far more succinct throughout with clearer English used. I do not like the heavy use of abbreviation but that may be a personal view. WA1, WA2 etc. would be clear if a shortened named based on their chemistry was used.

I have marked some of an attached manuscript to suggest edits, but much more will be needed to make it easier to read. Whoever included the blue edits writes well so you should be able to improve the paper further so that it is more accessible and has greater impact. I am impressed by the science and I would very much like to see this paper published.

Response – Thank you for your comments and for the general evaluation of our paper.
Paragraph 1:

- We agree that it was necessary to correct some further inaccuracies despite the extensive reworking of the paper in the first round. We have tried to incorporate your recommendations into the text; the explanation how is below.

Paragraph 2:

- Thank you for your comment. We have added new information into the Introduction in order to eliminate the shortcomings.

Paragraph 3:

- We agree that the chapter of Discussion needed further modifications. We have added the information about differences among wetting agents and deleted the controversial part

concerning liming on D-I sites. The information about lime application has been added to the chapter of Material and Methods.

- The information on four basic categories of wetting agents that were tested has been included in the introductory part of Discussion. Detailed characterization of wetting agents and discussion about their influence have been included in the third and fourth paragraph of Discussion. The reason is that we try to discuss first the measured values from the general point of the influence of wetting agents on the stability of soil aggregates, and then we try to characterize and discuss the individual variants.

Paragraph 4:

- We agree there is a lot of data and abbreviations in the text. This why we have deleted the abbreviation of SA (soil aggregates) while the abbreviations for individual wetting agents have been left in the text. The reason is that the composition of wetting agents is relatively complex, and we would not be happy with only one substance mentioned in the legend of tables and graphs, which could lead to erroneous data interpretation. Each table and graph have been added a legend explaining the used abbreviations.
- We have also tried to compare the measured values in a better way in the text, for example using relative differences and we hope it has contributed to higher clarity of the text.

Paragraph 5:

- Thank you for your comment. The text has been once again checked by the professional translator and we have also asked a native speaker for additional control our goal being not only elimination of grammatical errors but also improved readability of the text.

Response to comments and suggestions included directly in the text of the manuscript (pdf file attached to the review in the publishing system). Line numbering is taken from the pdf file:

Title, Abstract and Introduction

Line 1: title of manuscript

- We would rather prefer to have the "potential effect" in the title of the paper. It is the first output of our study into the effect of wetting agents on the stability of soil aggregates, and its results show a possible effect of the wetting agents. On the other hand, we realize that further experiments and analyses will have to be made for us to confirm this effect at 100% and to provide complete description for most of WA types. We simply did not want the title of the paper to be telling that all wetting agents affect the stability of aggregates (either positively or negatively).

Line 25: spelling correction

- „ It is obvious" has been reformulated.

Line 52: spelling correction

- „Affect" has been replaced with „may".

Line 60: spelling correction

- "A breaking stage" has been replaced with "advance".

Line 64: spelling correction

- "By themselves" has been deleted.

Line 68 and 80: use of the abbreviation SA

- We agree with your opinion, this abbreviation has been replaced by the term "soil aggregate(s)".

Lines 80 – 85: basic not needed

- We agree with your opinion, this part of introduction has been modified.

Line 133: the aim of the study

- This phrase has been deleted.

Materials and Methods

Line 146: spelling correction.

- Corrected.

Line 297: spelling correction.

- "Determined" has been replaced with "measured".

Line 305: Glomalin … reason for this measurement not adequate introduced in introduction

- We thank you for your comment. Additional information about the effect of glomalin on the stability of soil aggregates has been added into chapter Introduction (Line 90 and further).

Line 314: spelling correction.

- Use of the abbreviation WSA.

Line 320: spelling correction.

- Corrected.

Results

Lines 400 – 402: "WSA was ascertained before and after the addition of WA in a total of 54 soil samples from 9 sampling points (A – I; Figure 1) across the Czech Republic. The development of WSA in the control samples from the respective sites localities is very interesting."

- Deleted.

Line 402: spelling correction

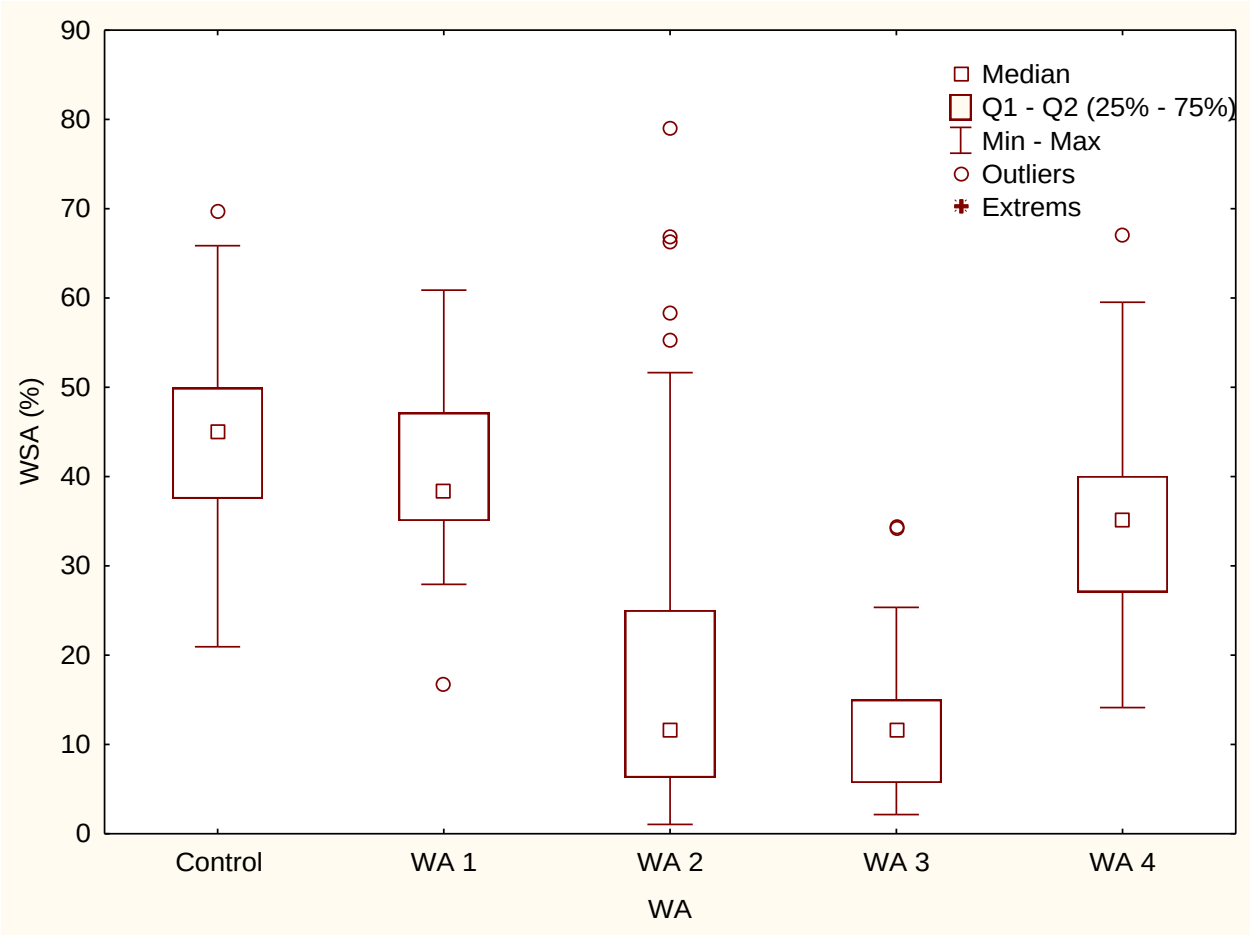
- This sentence has been reformulated on the basis of a recommendation.

Lines 404 – 406: spelling correction

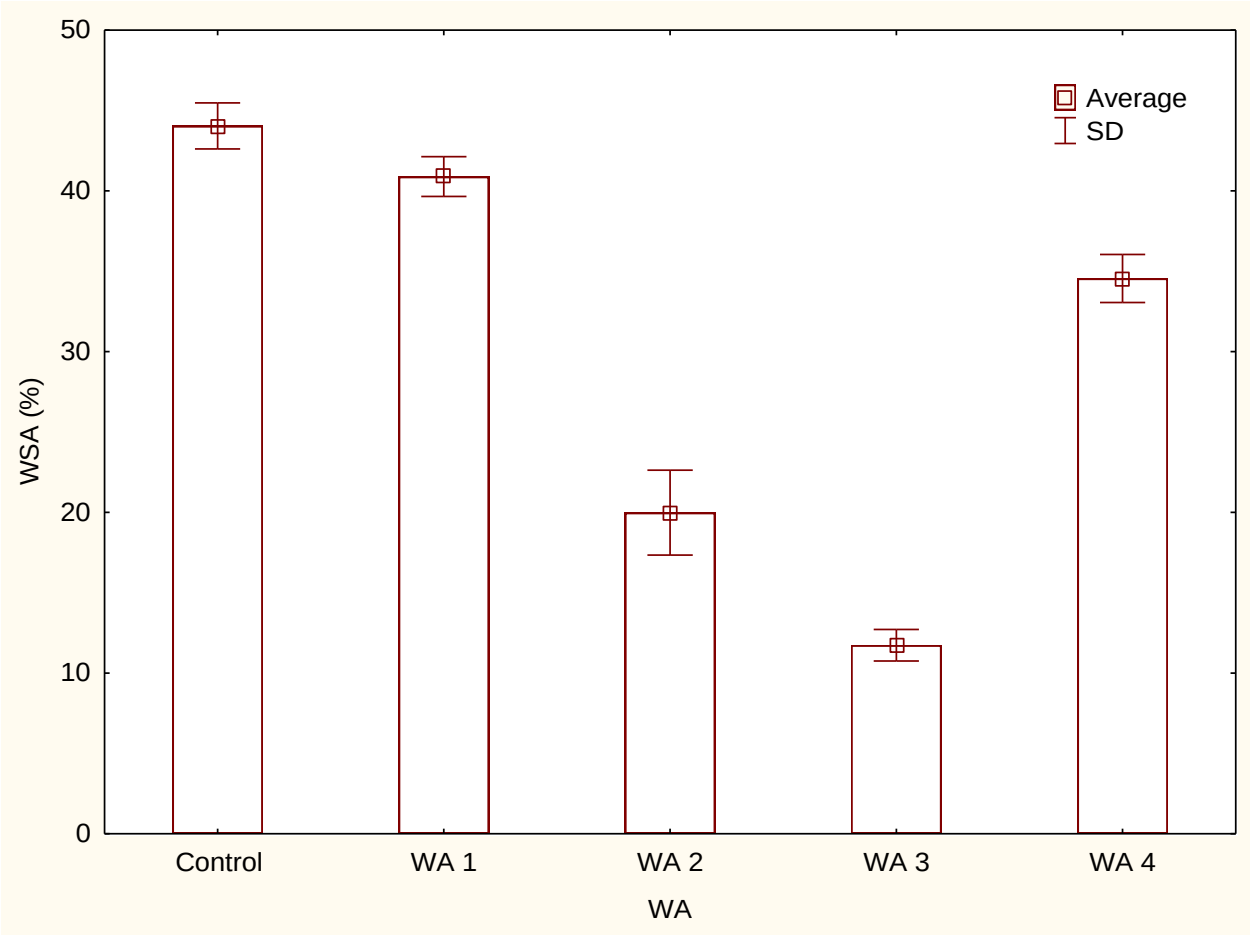
- Your proposals have been incorporated.

Line 411 – Table 4

- We apologize but we not able to read your comment by which you probably wanted to document the significance of measured data. For better clarity of measured WSA values, we attach below graphical illustration of average values of soil aggregate stability from all sites/sampling points. The values are expressed by box plot graph (A) and bar chart (B) without distinguishing the individual sampling points, it is about the overall effect of the addition of wetting agents on WSA.



A – Box plot graph. Effect of individual WA addition on WSA within all sampling points.



B – Bar chart. Average values of WSA (n = 54) ± SD from all sampling points.

Discussions

Line 612 – 613: spelling correction.

- Corrected.

Line 603: relative drop be more compelling to report.

- We thank you for your comment. We agree with your recommendation. Information on the relative decrease in WSA values has been added to the discussion.

Treatment/variant	Average WSA (%)	Relative drop
Control	44.04	**100%**
WA1	40.89	92.8%
WA2	19.98	45.4%
WA3	11.73	26.6%
WA4	34.55	78.5%

Line 605: This interpretation not agree with you. Any drop in WSA is bad.

- We agree with your comment. We just wanted to express that values measured in the control variant (44.04%) can be considered as average values in respect of assessing the stability of soil aggregates while values measured in variants WA2 – WA4 can be considered as below-average because they dropped deep below 40% of WSA – as mentioned for example by Bartlova et al. (2015) in CZE conditions.

- We agree that any drop in the stability of soil aggregates is bad; this is why we have added more information to the Discussion and modified sentences from Lines 605 further.

The authors hope that the revised version of the above manuscript no. soil-2021-91 will be accepted for publication in SOIL.

Yours Faithfully,

Dr. Jakub Elbl

RESPONSE TO REVIEWER' S COMMENTS (*second round of revision***)**

Dear Reviewer,
We thank you for your comments and detailed examination of our paper. All your comments have been included and corrected in the text of the paper. The explanation is proposed in the text below. We thank for the comments from the reviewer that have contributed to improve the quality of our paper and to eliminate mistakes.

Authors

Reviewer #2 (Professor Peter Matthews):

This revision is a very great improvement on the previous draft, and this is now a substantial, useful and very interesting study worthy of publication in the journal Soil. However, there are still minor errors, probably arising in part through the difficulty of the authors publishing in a non-native language. I attach a marked-up pdf with suggested corrections - although I cannot guarantee that the list is comprehensive.

Response - Thank you for your comments and for the general evaluation of our paper. The manuscript will be checked once again by the professional translator and by the native speaker.

Response to comments and suggestions included directly in the text of the manuscript (pdf file attached to the review in the publishing system). Line numbering is taken from the pdf file:

Abstract and Introduction

Line 20: Dont waste abstract space by this repetition of the list.

- Repetitive information on the chemical composition of wetting agents has been deleted.

Line 40: spelling correction.

- "Also" has been added into the sentence.

Line 53: spelling correction.

- "In" has been replaced with "for".

Line 120: Table 1 – I still do not understand the purpose of adding temperatures together. If we do not know how many temperatures have been added, then surely this measure is meaningless?

- We agree that this is not an unambiguous parameter. Therefore, it has been deleted from Table 2.

Line 205: "rubbed up" – not a technical term which I am familiar.

- We agree, this sentence has been reformulated.

Results

Line 305: The journal copy editor may not allow notes added to figure captions – you may have to merge the note and caption.

- Thank you for your comment. If the editor requires, then we will edit the description of the Figure.

Line 307: Is it made clear if these differences undermines the differences when WA is added?

- Different lowercase letters are to show differences in the stability of soil aggregates in the control variant at the individual sampling points. Our goal was to show (1) that the drop in the stability of aggregates occurred at each sampling point, and (2) that differences in the stability of aggregates existed between the individual sites. For better clarity, these written

indices can be deleted from the graph in Figure 2; differences between the control variants are shown in Annex c-7.

Line 360: Table 6 – I do find it difficul to understand the meaning of the various lowercase letters. Any further explanation, or repetition of other explanation, welcome.

- We agree with your comment. Additional information to show statistical differences has been added to the table description.

Line 385: Table 7 – not sure that the journal will allow red font in a table.

- Thank you for your comment. The highlighting of significant differences has been modified.

Discussions

Lines 404, 408, 409: spelling correction.

- The proposed changes have been made.

Conclusion

Line 535: spelling correction.

- The proposed changes have been made.

The authors hope that the revised version of the above manuscript no. soil-2021-91 will be accepted for publication in SOIL.

Yours Faithfully,

Dr. Jakub Elbl