

Dr. Bojan Radak

Journal of the Serbian Chemical Society: Environmental Chemistry Sub-Editor

Dear Dr. Radak,

We enclose the file attachment of the revised version of the manuscript “Allelopathic potential of *Robinia pseudoacacia* L. and *Ailanthus altissima* (Mill.) Swingle growing on asbestos deposits” by Filip Grbović, Gordana Gajić, Snežana Branković, Zoran Simić, Nenad Vuković, Pavle Pavlović and Marina Topuzović, submitted for publication in the *Journal of the Serbian Chemical Society*.

We want to thank the editor and reviewer for their critiques and revision recommendations. We have made corrections as they suggested and revised the manuscript accordingly. We think the revised paper is strengthened by them.

Changes to the revised manuscript are underlined using the tracked changes function of Microsoft Word. We have included the line numbers in the revised manuscript to help the editor and reviewer identify our changes. Please find attached a point-by-point response to reviewer’s concerns.

We hope that you find our responses satisfactory and that the manuscript is now acceptable for publication.

Sincerely,



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RESPONSE TO REVIEWER

GENERAL COMMENT:

The manuscript provides new information about the complex effect of *Robinia pseudoacacia* and *Ailanthus altissima* growing on asbestos deposits, which has scientific theoretical (weed and soil biology) and practical (recultivation) importance as well, so I recommend it for publication.

The topic of manuscript is current and significant. The format of manuscript is adequate and follows the journal style including the text, tables, figures and references. Content and format of all parts are adequate too. In my opinion, this manuscript should: be published after minor revision without additional review.

RESPONSE:

We sincerely thank the reviewer for his suggestions and comments; they are very helpful to improve our paper. The followings are our point-by-point responses:

1) Title:

COMMENT 1: The title of manuscript is short and informative but doesn't completely cover the entire content of manuscript. This study is more complex than the title reflects. Not only the allelopathic potential has been studied but the chemical composition of asbestos influenced by two woody species growing on. I suggest expressing this complexity in the title of manuscript as well, e.g. "Allelopathic and soil transformation effects of *Robinia pseudoacacia* and *Ailanthus altissima* growing on asbestos deposits", "Complex effect of *Robinia pseudoacacia* and *Ailanthus altissima* growing on asbestos deposits: allelopathy and biogeochemistry".

RESPONSE 1: As suggested by the reviewer, we have changed the title of manuscript to:

„Complex effect of *Robinia pseudoacacia* L. and *Ailanthus altissima* (Mill.) Swingle growing on asbestos deposits: allelopathy and biogeochemistry“. In Serbian abstract, title was changed to: „Комплексни ефекат *Robinia pseudoacacia* L. и *Ailanthus altissima* (Mill.) Swingle које расту на депозиту азбеста: алелопатија и биогеохемија“.

2) Abstract and keywords:

COMMENT 2: The abstract is compact, establishes the topic and summarizes the most important results of research. The length of abstract exceeds the required 200 words. The keywords and running title are adequate.

RESPONSE 2: The number of words in the abstract is below 200 in the Word document, but in the PDF format this number is higher.

3) Introduction and literature review :

COMMENT 3: The literature review is up-to-date and suitable; contains the most important literature source connecting to the study. In the last section of introduction, I suggest mentioning that the allelopathic effect of both studied species have already known by literature and mainly phenolics are responsible for this effect (supported by references). I find it important because this explain the objectives of study, the analyses of allelopathy and phenolic contents as well.

RESPONSE 3: Following reviewer suggestion, we added a new paragraph in Introduction section: „*Robinia pseudoacacia* L. (native in North America) and *Ailanthus altissima* (Mill.) Swingle (native in China) become naturalized in many parts of Europe, and in Serbia are considered as non-indigenous invasive plant species.²³ High invasion capacity of *R. pseudoacacia* and *A. altissima* is the result of very effective generative and vegetative reproduction,^{24,25} as well as allelopathic activity of plants.^{26-28,25,17} Generally, phenolics that were found in *R. pseudoacacia* and *A. altissima* tissues can act as allelochemicals and possess a high allelopathic activity.^{24,25} Most studies are dealing with allelopathy in natural habitats or in laboratory, but knowledge regarding on allelopathic activity of woody plants from anthropogenically disturbed sites is still missing.“

6) Results and Discussion:

COMMENT 11: Describing the results is appropriate and give a multifaceted evaluation. I suggest writing the entire scientific name of test plant in Figure caption (line 297).

RESPONSE 11: Based on the recommendation of the reviewer, in the Figure caption there is now the entire scientific name of both indicator species (*Trifolium pratense* and *Medicago sativa*).

7) Other comments:

COMMENT 12: There are some spelling mistakes in the text, e.g. line 23: available, line 78: where where, line 82: 8MgOx2SiO2x2H2O (missing spaces), line 261: M. sattiva, lines 286, 297, 315: T. pretense, line 309: Conclusion (according to the guideline: Conclusions).

RESPONSE 12: According to reviewer suggestions we corrected spelling mistakes: available > available; where where > where; 8MgOx2SiO2x2H2O > 8MgO x 2SiO₂ x 2H₂O; M. sattiva > M. sativa; T. pretense > T. pratense; Conclusion > Conclusions.

COMMENT 13: I would like to draw the authors' attention to the high invasibility of both *Robinia pseudoacacia* and *Ailanthus altissima* due to not only their allelopathic effect, but very effective generative and vegetative reproduction as well: - Cierjacks et al. (2013): Biological flora of the British Isles: *Robinia pseudoacacia*. – Journal of Ecology (101)6: 1623–1640. - Kowarik, I. – Säumel, I. (2007) Biological Flora of Central Europe *Ailanthus altissima* (Mill.) Swingle. – Perspectives in Plant Ecology, Evolution and Systematics 8 207–237.

RESPONSE 13: We thank the reviewers because these points were useful to clarify the important part of the paper. We added information about effective generative and vegetative reproduction potential of *R. pseudoacacia* and *A. altissima* in Introduction section.

COMMENT 14: Although these species seems to be suitable for revegetation of disturbed sites because of favorable biogeochemical effect, it is important to mention the invasive risk caused by them in manuscript definitely.

RESPONSE 14: We thank the reviewer for bringing this critical point to our attention. In the Conclusions, we modified last sentence to: „Results in this study indicate that *A. altissima* is suitable for revegetation of disturbed sites because it improves asbestos chemical properties and affects the biogeochemistry of anthropogenic ecosystems, but should pay attention to invasion risk due to high allelopathic potential.”

8) References:

We have added the following references:

23. P. Lazarević, V. Stojanović, I. Jelić, R. Perić, B. Krsteski, R. Ajtić, V. Bjedov, *Zaštita prirode* **62** (2012) 5 (in Serbian) (ISSN 0514-5899) (<https://scindeks.ceon.rs/article.aspx?artid=0514-58991201005L>)
24. A. Cierjacks, I. Kowarik, J. Joshi, S. Hempel, M. Ristow, M. von der Lippe, E. Weber, *J. Ecol.* **101** (2013) 1623 (<https://doi.org/10.1111/1365-2745.12162>)
26. H. Nasir, Z. Iqbal, S. Hiradate, Y. Fujii, *J. Chem. Ecol.* **31** (2005) 2179 (<https://doi.org/10.1007/s10886-005-6084-5>)
27. D. Bartha, Á. Csiszár, V. Zsigmond, *Black locust (Robinia pseudoacacia) in The most important invasive plants in Hungary*, Z. Bolta-Dukan, L. Balogh, Ed(s), Institute of Ecology and Botany, Hungarian Academy of Sciences, Vácrátót, Hungary, 2008, p. 63 (ISBN 978-963-8391-42-1)
28. Á. Csiszár, *Acta Silv. Lignaria Hungarica* **5** (2009) 9 (ISSN 1786-064x)

Following references changed their position in reference list in accordance to changes in text:

- [23] > [29] B. Tatić, V. Veljović, A. Marković, B. Petković, *Biosistematika*, **7** (1981) 123 (in Serbian)
- [24] > [30] S. R. Branković, R. M. Glišić, V. R. Đekić, M. Marin, *Hem. Ind.* **69** (2015) 313 (<https://doi.org/10.2298/HEMIND131017045B>)
- [25] > [31] I.V. Tyurin, *Agrochemical methods of soil analysis*, Nauka, Moskva SSSR, 1965 (in Russian)
- [26] > [32] J. Benton Jones Jr, *Laboratory Guide for Conducting Soil Tests and Plant Analysis*, CRC Press, Boca Raton, Florida, USA, 2010 (<https://doi.org/10.1201/9781420025293>)
- [27] > [33] R. A. Džamić, D. Stevanović, M. Jakovljević, *Praktikum iz agrohemije*, Poljoprivredni fakultet, Beograd, 1996 (in Serbian)
- [28] > [34] H. Egner, H. Riehm, W. R. Domingo, *Kgl. Lantbruks-Hogskol. Ann* **26** (1960) 199
- [29] > [35] USEPA, *Method 3051A: Microwave assisted digestion of sediments, sludges, soils and oils. Test methods*, 2007 (<http://www.epa.gov/epawaste/hazard/testmethods/sw846/pdfs/3051a.pdf>).
- [30] > [36] M. Žemberyová, J. Barteková, I. Hagarová, *Talanta* **70** (2006) 973 (<https://doi.org/10.1016/j.talanta.2006.05.057>)
- [31] > [37] P. C. Wootton-Beard, A. Moran, L. Ryan, *Food Res. Int.* **44** (2011) 217 (<https://doi.org/10.1016/j.foodres.2010.10.033>)
- [32] > [38] C. Quettier-Deleu, B. Gressier, J. Vasseur, T. Dine, C. Brunet, M. Luyckx, M. Cazin, J. C. Cazin, F. Bailleul, F. Trotin, *J. Ethnopharmacol.* **72** (2000) 35 ([https://doi.org/10.1016/S0378-8741\(00\)00196-3](https://doi.org/10.1016/S0378-8741(00)00196-3))
- [33] > [39] Y. Fujii, A. Furubayashi, S. Hiradate, *Rhizosphere soil method: a new bioassay to evaluate allelopathy in the field*, In *Proceedings of the 4th World Congress on Allelopathy: Establishing the Scientific Base*, (2005), Wagga, New South Wales, Australia, Centre for Rural Social Research, Charles Sturt University, Wagga, New South Wales, Australia, (2005), p. 490 (http://www.regional.org.au/au/allelopathy/2005/2/3/2535_fujiiy.htm)
- [34] > [40] R. D. Reeves, *The hyperaccumulation of nickel by serpentine plants*, in *The vegetation of ultramafic (serpentine) soils*, A.J.M Baker, J. Proctor, R.D. Reeves Ed(s)., Intercept Ltd., Andover, Hampshire, UK, 1992, p. 253 (ISBN 0946707626 9780946707621)
- [35] > [41] A. Kabata-Pendias, *Trace elements in soils and plants: Fourth edition*, CRC Press, Boca Raton, Florida, USA, 2010 (<https://doi.org/10.1201/b10158>)

- [36] > [42] N. Pedrol, L. González, M. J. Reigosa, *Allelopathy and abiotic stress*, in *Allelopath. A Physiol. Process with Ecol. Implic.*, Reigosa MJ, Pedrol N, González L, Ed(s)., Kluwer Academic Publishers, Netherlands, 2006, p. 171 (https://doi.org/10.1007/1-4020-4280-9_9)
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- [39] > [45] K. A. Vogt, Z. Yu, R. A. Dahlgren, *Nature* **377** (1995) 227 (<https://doi.org/10.1038/377227a0>)
- [40] > [46] J. H. J. R. Makoi, P. A. Ndakidemi, *New Zeal. J. Crop Hortic. Sci.* **40** (2012) 161 (<https://doi.org/10.1080/01140671.2011.630737>)
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- [42] > [48] L. Li, S.-M. Li, J.-H. Sun, L.-L. Zhou, X.-G. Bao, H.-G. Zhang, F.-S. Zhang, *Proc. Natl. Acad. Sci.* **104** (2007) 11192 (<https://doi.org/10.1073/pnas.0704591104>)
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- [44] > [49] L. Gómez-Aparicio, C. D. Canham, *J. Ecol.* **96** (2008) 447 (<https://doi.org/10.1111/j.1365-2745.2007.01352.x>)