Dear Prof. Ražić,

Thank you very much for the suggestions about our paper No.: 1760-8252, titled:  *Determination of multi-class herbicides in soil by headspace solid phase microextraction method*, by Rada Đurović-Pejčev, Tijana Đorđević and Vojislava Bursić. We did our best to improve our paper followings the remarks we got from the Reviewer, so we hope that our improved paper might be now good enough to be published in JSCS.

I am looking forward of hearing from you soon.

Sincerely yours,

Rada Đurović-Pejčev

**COMMENTS AND ANSWER**

**Remark 1:**

As you suggested, article title has been modified and now runs: *Determination of multi-class herbicides in soil by liquid-solid extraction coupled with headspace solid phase microextraction method*.

**Remark 2:**

As you suggested, chromatograms obtained by the direct injection of the extract (obtained after liquid-solid extraction) and after the HS-SPME additional step were presented (Figure 4). According to this insertion, the additional sentence was inserted into the paper (section: RESULTS AND DISCUSSION/Soil extraction optimization – marked red): *Fig. 4 most clearly indicates the real advantages of an additional SPME step in our sample preparation method as it shows comparative chromatograms obtained both by direct injection (Fig. 4C) of the obtained extract (obtained after liquid-solid extraction) and after additional HS-SPME purification and concentration (Fig. 4A) of that extract.*

(All mentioned corrections were marked red in the text).

**Remarks 3, 4 and 5:**

This work was done as part of the project TR31043 (under project task relating to determination of herbicides in soil), while the previous one (published 2010) was results within project TR20041 (under project task relating to determination and fate of pesticides (among herbicides, some insecticides and fungicides were included) in soils with different physico-chemical properties). Additionally, the presented method is based on headspace while the previous one was related to direct mode of SPME determination.

But, considering mentioned, we agree with you that the last paragraph in the Conclusions in the presented form is not quite precise, so we made some corrections (marked red): *Comparing the results obtained by application of the developed HS-SPME method and those published for application of DM-SPME method for the same herbicides and soils under study, we inferred that both methods are suitable for the routine determination of selected herbicides in soil samples. However, as the HS-SPME mode secures an extended fiber lifetime, compared to the DM-SPME mode, the proposed method may be more appropriate for analysing complex soil matrix.*

As you suggested, comparative chromatograms for both, LS-HS-SPME and LS-DM-SPME mode were added in Figure 4, and consequently the additional sentences were inserted into the last paragraph of the section: RESULTS AND DISCUSSION/Soil extraction optimization – marked red): *The chromatogram obtained after DM-SPME determination of the selected herbicides in soil extract is presented in Fig. 4B, too.* *The choice of experimental conditions for DM-SPME determination was based on our previous investigation.13 Evidently, compared to LS method, both additional SPME steps [HS-SPME (Fig. 4A) and DM-SPME (Fig. 4B)] provide a much higher sensitivity in determination of all herbicides, and the HS-SPME approach is somewhat better. As the SPME fiber was not in direct contact with unwanted impurities (compounds that were co-extracted from soil matrix during LS sample preparation) during the HS-SPME application, unlike DM-SPME application, the obtained results were no surprising.*

**Remark 6:**

As you suggested, additional sentence (the last sentence in the section RESULTS AND DISCUSSION/ Application of the LS–HS-SPME method– marked red) was added: *Exactly, satisfactory precision and repeatability obtained with the same SPME fiber during experiments presented in this paper showed that a single PDMS fiber could be used for more than 130 measurements. On the other hand, our previous investigation had shown that the same PDMS fiber could be used for much fewer injections (about 70-80 times) when DM-SPME mode was used for determination of pesticides in the soil matrix.13*

**Remark 7:**

-I agree with you that we may use the longest time period between soil spiking with pesticides and analysis but as I know, analysts the most often use this time period (24 h) in method development (in pesticides/soil system), so we chose the same period too.

-Theoretically, quantification by the conventional external standard calibration procedure can be used for SPME measurement but in the practice SPME approach is preferred. The main reason is that SPME is basically both a solvent-free and not an exhaustive extraction technique/method, opposite to conventional direct injection of standard solution into GC. Moreover, a solvent used during direct injection is introduced into the GC injector port, while it is not so in the case of the SPME fiber (as retention times occurring as a consequence of the “solvent effect” in the case of conventional direct injection are not the same as after SPME, the analyte´s peak areas would not be the same).

-Unfortunately, we have not certified reference soil (financial problems), and right now we are examining the impact of the soil composition on the proposed method efficiency (we plan to submit the obtained results to one of the following issues of JSCS).

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