

Interactive comment on “Status of organochlorine pesticides in Ganga river basin: anthropogenic or glacial?” by P. K. Mutiyar and A. K. Mittal

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Reply to the comments

1. Reviewer highlighted about the spelling abnormality. This has been rectified in the modified manuscript. Consistency in written style has been incorporated.
2. Page 3 line 5, changed to plural from “part” to “parts”.
3. Page 3 line 28, changed to covers a.
4. Page 3 line 29, Out added in the line.
5. Page 4 line 1, comma and a included.
6. In India, agricultural practices are shifting from OCPs to Ops, but some of the OCPs
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are still used for public health purposes to control malaria.

7. UK stretch of the river was monitored in winters as in winter season because the maximum share of flow in rivers comes from old glacial melt in winters. In summers fresh fallen snow melt first while in monsoon, rainy water makes the large share of the river flow in Himalayas. The objective of the study was to identify possible sources of OCPs in the river and thus in plains, the runoff from agricultural field needs to be trapped, which reaches to river in monsoon and post monsoon season. In conclusion, this has helped us in source apportionment of the OCPs.

8. Pesticides used by the public health department to control malaria and other house pests often reach to the domestic sewage. Inside buildings, pesticides are sprayed against insects and other house pests which along with floor cleaning reach the sewage.

9. Only one sample was taken from each site for pesticide analysis because it was too bulky to carry the duplicate samples from remote places. Most of the sampling sites along the river Ganges were far away from the cities and towns. Duplicate sampling makes the sample load too heavy to handle by the researcher. Although 2 samples were taken from each site where one was used for pesticide analysis while 2nd was used for general water quality parameters.

10. Phosphate was not monitored because the major objective of the study was to determine the pesticide pollution in Ganga river, not the nutrients and domestic sewage pollution.

11. Spelling of Shimadzu is corrected.

12. Table 3, units and MQL were shifted to the left during PDF making process which resulted Units to come under the column of R2. This has been rectified.

13. Nitrate and ammonia were not measured in UK stretch as the cities along this section of the rivers are very small except for the Rishikesh and Haridwar. No intensive

agriculture is also observed in the area, thus it was assumed that nitrogen pollution will be negligible small in this stretch.

14. Page 8, line 9 means the water quality is very good as per the CPCB categorization for the river water.

15. These STPs have secondary treatment. There is no tertiary treatment. Thus, STPs have not been designed for the removal of nutrients. Presently, in India, there are no standards for nitrogen and phosphorus, so most of the STPs lack the nutrient removal units.

16. Individual point values were explained in the text, if observations varied highly. Further in Table 4, average values, SD and ranges are given for better understanding.

17. The minimum DO level (DO, 1.0 mg/L) was reported at one place only, from small tributary of river Ganga, Varuna river at Varanasi, which have very less flow even in the monsoonal season. It was mentioned in the text.

18. The FC counts were not monitored during the campaign as we require different sampling campaign for bacteriological water quality monitoring and samples must reach to the laboratory within 8 hours under aseptic conditions, which was not possible during this sampling campaign.

19. Page 11, line 13, has been corrected.

20. In the Conclusions, concentrations of the OCPs are compared to drinking water standards.

Please also note the supplement to this comment:

<http://www.drink-water-eng-sci-discuss.net/5/C155/2012/dwesd-5-C155-2012-supplement.pdf>

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