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Drinking Water Engineering and Science Discussions

Interactive comment on "Low-cost multi-stage filtration enhanced by coagulation-flocculation in upflow gravel filtration" *by* L. D. Sánchez et al.

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Response to the comments of Referee #1:

We really appreciate your comments and your dedication to the revision of the work. In regard to your comments here are the answers:

Comment 1: The article is well writing and is interesting.

Answer: We appreciate that you like the article which we consider important as we believe that such developments are relevant for small water supply systems, where simplicity in operation and maintenance at reasonable costs is crucial.

Comment 2: The performance of Jar- test experiments is no well written and also

the discussion is poor. Fig 3 and Table 6 are confusing. Figure 3 is no well entitled therefore it is confusing, and further, how were the jar test experiments performed? It is unclear from the text: how were water sample prepared with the certain turbidity, were this model sample? What that's it mean optimal (regarding dose, coagulant time, slow mixing gradient and time) in the Table 6? It is not clear from the text. Section 3.2 must be improved. Also a section "Jar Test performance" is desired.

Answer: In relation to the jar tests, we have to point out that optimizing the dosing was not part of the research. We presented the data that were established earlier in 2004 and have included the reference. These tests were used to set up a dosing schedule forms the basis for plant operation, and which we could not adjust. We have clarified this point and incorporated adjustments in sections 2.2 and 3.2.

Comment 3: The sentence is not clear: the CF-UGF stage represented only 7% of the total construction costs and the pretreatment by CF- UGF and UGF represented 35% of the total construction costs. Consequently the cost per capita should be higher?

Answer: the percentage indicated refers to the cost of each treatment stage compared to the total costs of treatment plant (according to Table 10). 35% refers to the cost of both pretreatment steps in relation to the total cost of the plant and does not mean a higher cost per capita. The percapita cost is obtained from the total investment cost in relation to the total population and water demand. We adjusted the text talking about 7% and 28% for the respective pre-treatment steps.

Comment 4: My concern is section "references": out of 42 references only 6 are cited which were written after the year 2000. The reader could have an impression that the topic is obsolete; therefore, I would suggest the improvement of the reference list.

Answer: You touch an interesting point. The point is that this in fact reflects the situation in which limited research has been carried out recently. We are reviewing the list and now have a total of 8 out of 38, and may still be able to add one or two more.