

## ***Interactive comment on “Study on the antibacterial activity of selected natural herbs and their application in water treatment” by P. S. Harikumar and C. M. Manjusha***

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1. Major portion of abstract, introduction and significance, of this manuscript need to be rephrased or changed to avoid plagiarism from other documents. a. Abstract: Page 200, Line 4 to 6?

(A) The manuscript has been edited.

b. Introduction: Page 200, Line 25-26 and Page 201, Line 1-7; 7-18

(A) The manuscript has been edited.

c. Significance of the study (Page 207, Line 22 to 26 and Page 208, line 1 to 11)

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(A) This part of the paper explains the cost effective treatment method by natural methods which can be used safely for water purification.

2. Findings should also be discussed in the abstract instead of making general statements.

(A) The abstract has been revised.

3. Could you please be more explicit about sample preparation of plant extract? The leaves were fresh or dried; what volume was obtained from 20g of leaves was there any dilution with water or any solvent. The extracts were used as it was or filtered before antimicrobial analysis and stability analysis?

(A) Fresh leaves were used and it was soaked overnight in distilled water and then it was thoroughly ground using motor and pestle along with 100 ml distilled water and filtered. Corrections were made.

4. Determination of shelf-life of the plant extract is not clear. Is the relative value of absorbance is sufficient to determine the shelf-life of a plant extract? The stability graph shown on page 230 is questionable as the absorbance was almost stable from 3rd day to 15th day and how suddenly it could be zero. This should be checked once again.

(A) If the absorbance value of an herb is decreasing it may be attributed with its variation in life. Also as the absorbance was read at 650 nm, chlorophyll a content might have shown this variation. Continuous monitoring of absorbance was done using UV-Vis spectrophotometer. On 15th day the value was 2.99 but on the 16th and 17th day the reading was found to be zero. The life of the extract has stopped after the 15th day. The experiment was repeated for verification. Reference: (1) Anjali Basu, Debasri Mukherjee, Arnab K. Ghosh, Elina Mitra, Syed Benazir Firdaus, Debosree Ghosh, Kuladip Jana, Arun Bandyopadhyay, Aindrila Chattopadhyay and Debasish Bandyopadhyay., 2013. Melatonin augments the protective effects of aqueous leaf homogenate of

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Tulsi (*Ocimum sanctum* L.) against piroxicam-induced gastric ulceration in rats. *Asian Journal of Pharmaceutical and Clinical Research* 6 (2) : pp 123-132. (2) Devi Datt Joshi., 2012. *UV-Vis. Spectroscopy: Herbal Drugs and Fingerprints*, Springer India, pp 101-120.

5. Assessment of antimicrobial activity through spread plate method is confusing (Page 202, Line 7-12). It is not clear that antimicrobial tests were done on well water sample or pure culture.

(A) The antimicrobial tests were done for well water samples.

6. As most of the medicinal plants have pungent aroma therefore the public acceptance of drinking water containing 15% of any plant extract is questionable.

(A) As you stated, there was a change in taste but many people accepted it as there was a decrease in the bacterial load. We have only introduced the most efficient herb in different households. In the region where the study has been carried out, the people have the habit of using herbal water for drinking purpose.

7. The findings of the present work should be discussed in details and should be supported and compared with the relevant work done elsewhere. (A) The findings have been compared with relevant works carried out already and included in the discussion part.

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Interactive comment on Drink. *Water Eng. Sci. Discuss.*, 6, 199, 2013.