

Interactive comment on “Effect of biostimulation on biodegradation of dissolved organic carbon in biological granular activated carbon filters” by K. Tihomirova et al.

K. Tihomirova et al.

kristina.tihomirova@rtu.lv

Received and published: 29 April 2012

We thank the Referee for the comments.

1) Should there be some guidelines how long adaptation period should be to used to avoid underestimation of BDOC values?

According to 30 experiments carried out in this study the safe period for adaptation is at least 20 h, but for practical reasons 24 h should be used.

2) A comment/question is didn't the addition of organic (Luria Bertani medium) bio-stimulant bring any additional BDOC into the system?

Of course, this addition of biostimulant increased total BDOC in influent water; however increase in the total consumption of BDOC allowed to reduce both BDOC added as biostimulant and native BDOC in the sample.

In this study biostimulants (NaAc or LB) are easy convertible substrate for bacterial biomass. In these experiments NaAc was used as single carbon source and Luria Bertani medium as multicarbon source. Main component of LB medium are Tryptone, Yeast extract and NaCl. Tryptone provides was used a source of amino acids for the growing bacteria, Yeast extract, like monosodium glutamate (MSG), contains free glutamic acid.

Results obtained in this study showed that BDOC concentration increased significantly (up to 29 %) and was utilized after 24 min contact time due to biostimulation comparing with sample without biostimulant. It has been shown previously that the addition of LOC results in an increase in the concentration of easy degradable part of mixture and stimulates the biodegradation via decrease in minimum EBCT compared to that without biostimulation (Spain et. al., 1980, Yavich et. al., 2004). It has been shown that the biodegradable DOC is utilized after short contact time or at the top of the biofilter (Moll et. al., 1998).

3) Specific comments: Page 70, chapter 2.2, line 3. In sentence: "To avoid nutrient limitation..." is should be indicated that the purpose is to avoid limitation originating from inorganic nutrients.

Yes, this remark will be taken into account.

4) Page 72, chapter 3 Results, lines 10-11. LOC was only 0.49 mg/l or 7% in this study. I think 7% means of all DOC ?

Following your comment the text will be revised as follows: "The average concentration of BDOC of water sample without addition of LOC was only 0.49 ± 0.29 mg/l (n=14) or 7% of DOC(BAC) in this study".

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)

Interactive
Comment

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)

