

RC3

It is a very interesting paper that compares the performance of three nebulizers for the work of bio-aerosols in atmospheric simulation chambers (ASC). The authors investigated the efficiencies of the nebulizers in association with the airflow and the subsequent viable fraction of the bacterial cells after nebulization into an ASC. The paper points out nicely the advantages and disadvantages regarding the performances of each nebulizer and allows the reader to follow easily by pointing out a clear conclusion in the end.

We thank the Reviewer for the valuable comments, we reply point by point directly in the text (blue lines).

Just a few remarks from my side:

Make sure to use the same font, size, ect. to fulfill the format requirements

Thanks for the note: we uniformed the format throughout the text.

It's difficult to understand what the 11% (line 22) refer to exactly. Make it more clear in both the abstract and results section.

The Reviewer is right. We added the following sentences:

Lines 21-22: *"(i.e. standard deviation of the results obtained with the three nebulizers)"*

Lines 213-215: *"This value corresponds to the standard deviation of the results of the entire bunch of experiments around the mean value of the collected to injected CFU ratio (taking into account the results of all the three nebulizers)."*

Line 39: "non-trivial"

Done.

Line 65: "of the cfu..."

Done.

I think it is very nice how you described the different nebulizers in 2.2, however it would make more sense to move this section to the Introduction section

We see the point however, since the different performance/behavior of the three nebulizers is a central aspect of our technical paper we'd prefer to maintain this description in the "material and method" section.

Line 142: "sterilization system, too"

Done.

In section 3.1 it would be nice to read a bit more about how it is possible to compare one nebulizer in ml, while the other one is in minutes

The Review is right and we are aware that we used a quite peculiar "metric". We added the following sentences at line 171- 174, to clarify the reason of this choice:

“Since the Collison nebulizer is working in a recirculation mode, (i) it is not possible to quantify the absolute value of the liquid volume passing through the nozzle, (ii) an unknown fraction of the liquid to be aerosolized pass through the nozzle more than once. To have a comparable metric, in the experiments with the Collison the volume of the liquid was substituted with the injection time (5 min, the same used with other two nebulizers)”.

Avoid statements that are vage such as in line 186: "output of viable bacteria turned out to be quite high" and rather write those results with clear statements (eg. by including numbers)

The Review is right and we had modified the sentences at line 186 as follow:

“However, with the described injection conditions (5 min, air flow \leq 5 lpm) the output of viable bacteria turned out to be comparable with the results obtained with the other two nebulizers.”

Use the same units throughout the whole paper

Thanks for the note: we uniformed the units throughout the text.