

Biogeosciences Discuss., referee comment RC1 https://doi.org/10.5194/bg-2022-125-RC1, 2022 © Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.

## Comment on bg-2022-125

Anonymous Referee #1

Referee comment on "Spruce bark beetles (*Ips typographus*) cause up to 700 times higher bark BVOC emission rates compared to healthy Norway spruce (*Picea abies*)" by Erica Jaakkola et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2022-125-RC1, 2022

This study investigates the effect of bark beetle attack on Norway spruce biogenic volatie organic compounds. While I think it is a interesting study subject, I found the manuscript difficult to evaluate because I could follow the experimental design: what was the n for all the different treatments, plots, sites, ect.? when was sampling performed i.e dates and time? I think it would be very helpful to make an experimental design figure.

My other major comment is about the statistics. I saw that there was a statistics paragraph in the methods, but I would like to have more details about how the statistics were perform. Also, no statistic were included in the result or figures.

Finally, in the first sentence of the last paragraph of the introduction it is stated "The defense mechanism of Norway spruce is poorly understood." I don't think this is a fair assessment of the field. We know quite a bit about the induction of terpenes, phenolics, and traumatic resin ducts (e.g Krokene, 2015 Conifer Defense and Resistance to Bark Beetles in Bark Beetles: Biology and Ecology of Native and Invasive Species ; Celedon and Bohlmann, 2019 Oleoresin defenses in conifers: chemical diversity, terpene synthases and limitations of oleoresin defense under climate change, New Phytologist). Although, I agree that we still have a lot to learn.