

## Response to comments of Reviewer 1

We thank the reviewer for the comments and suggestions on the manuscript. Our response (in blue) and the corresponding edits (in red) are shown below.

5 1. The authors have responded to comments raised, updated the model version they use, and run additional simulations.

I only have one comment I wish to re-raise from the original review, which is that I remain concerned by the use of AOT40 in the text, when only a single month is modelled. This metric explicitly considers accumulated ozone over the whole growing season. A longer simulation needs to be run or a phrasing germane to "threshold of 40 ppbv" or "Σ(hours>40ppbv)" should be used instead of AOT40 in text and figures.

15 **Response:** We have modified our section "3.5. Implications for policy assessment" to address the reviewer concern. It is true that a 3-month simulation would be needed to cover the reference period used for this metric (May to July, for the protection of crops). The AOT40 concept however, can be applied to other accumulation period such as April to September, in the case of forests. This was already reflected in previous versions of our manuscript but we now clarify the limitations of the assessment regarding this legal parameter.

The revised text:

20 Since our experiment covers only one month, it is not possible to assess the impact of halogen chemistry on these two indexes. Nonetheless, we have compared the results of both maximum daily 8-hour mean and 1-month AOT (Σ(hours>40ppbv) over July; Fig. 8) for the BASE and HAL simulations. The relative variation provide a good indication of the impact that considering halogens in our modelling system may have in the estimation of legally-relevant indexes.

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Figure 8. **AOT40 for July** in the BASE and HAL simulations, and absolute and relative changes between the two simulations

2. I have also raised some minor comments below. After this point have been addressed, I  
30 would support publication in ACP.

Fig S2 - Add a definition of Northern and Southern Europe in caption/text (e.g. latitudinal  
divide used).

We have added the definition of northern and southern Europe in the caption.

35 3. Table 3 footer - correct typo in the name (“Banna” should be “Bannan”).

We have corrected the typo.

4. Page 12 Line 251 - correct typo in reference. “Bannan et al. (2019)” should be “Bannan et  
al. (2017)”

40 We have corrected the typo.