Questions

It has been observed that the manuscript is, worth publishing, however it could benefit greatly from a statistician that could be involved in the paper/project. Currently it has been identified that there are several mistakes and inaccuracies typical of people ‘able’ to using sophisticated statistical models but with no sound statistical background.

1. It has been suggested that a statistical test should be used, rather than visually inspecting Figure 1. The point would be to test whether the relationship is linear or piecewise linear, and it has been suggested *segmented* could be used for this to identify the breakpoints in the data. While this step was meant to be more for the germination scientist to decide if their experiment was sufficient or not, we agree explicitly testing this before step 3a and b would be helpful and also an important result for the scientist to present in papers. Could you point out your opinion on the best way to do this with this type of data?
2. It has been suggested *Figure 4* is not necessary. We did not explain the reasons for this extra step well in the manuscript, but perhaps this point warrants discussion with a statistician before we reach a decision on whether to keep it or eliminate it. We have proposed step 3b, related to *Figure 4* for the following motivations;
3. It eliminates the need to ‘throw out’ data when common problems are encountered in germination data, and allows for an option for partial analysis when the experiment was not successful in identifying the full temperature range of a given species, or a full piecewise regression, as a discussion point for next steps;
4. It demonstrates the difference between a segmented model that might not fit perfectly (often germination data can be irregular), and two linear models;
5. It can give the statistical fit of each line, as is sometimes necessary for publication or requested by reviewers;
6. It has been suggested that instead of Figure 4, the linear fits could be added to the appropriate panels in Figure 3. We are not sure how to accomplish this, and wonder if you might have a suggestion. We feel perhaps fitting linear models to the appropriate cases in Figure 3 might create confusion we am not sure, but interested in testing this.
7. One benefit of this method we argue for is that it removes bias from the researcher identifying the breakpoint themselves or eliminating data points that don’t fit the segmented model themselves. Reviewer 1 felt this was incorrect as the bias of the programmer must be integrated into the programming of the *segmented* package, thus we need to address this aspect more directly and clearly.
8. One suggestion that has been made to make the step of break point identification more clear is to explain the underlying equations that are used to identify the breakpoint using *segmented.* Our current explanation is insufficient.