

## ***Interactive comment on “Effects of storage temperature on physiological characteristics and vegetative propagation of desiccation-tolerant mosses” by Yuewei Guo and Yunge Zhao***

### **Anonymous Referee #1**

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The authors present a very nice paper looking at the effects of dry storage temperature of three biocrust moss species on viability of the mosses in terms of regeneration and some physiological attributes. They demonstrate that optimal storage temperature varies by species, and can have an impact on the heath and gametophyte reproduction. This is a nice addition to the literature, as mosses contribute great ecosystem benefit to drylands, and can be used in restoration. Dry storage is essential to this endeavor. It also speaks to how much more there is to learn about the ecology of these dessication tolerant species. I highlight below a few issues where more information, clarification or interpretation need to be addressed. A careful edit for proper English grammar could be benefit, but overall the manuscript is well written. Methods Line 23, page

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3: “average accumulated temperature...3733 and 3283C” is an odd way to share the temperature range. Instead, please present mean annual temp, mean annual high and mean annual low. How were mosses collected? How were moss storage temperatures maintained? Were they in incubation chambers? I’m unclear on your sampling/splitting design. Did you collect from one colony and split this many ways (for initial, and then the 5 temperature gradients)? You say you have 3 duplicates or subsamples. Does this mean you originally collected from 3 colonies per species, or you split the one colony into “replicates” for each temperature level? Germination parameters: what do you mean by “5 inocula” (line 39 page 4). Does this mean 5 stems?

Results For the physiological parameters, it might be more helpful to say the change from the initial condition, rather than the total. In this way, we can look at positive or negative effects of storage more easily. The grey incidence analysis is over-interpreted. Most of the values overlap and thus, cannot be interpreted as greater or lesser than one another.

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