

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 #2

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This paper examines the influence of dry storage temperature on regeneration and physiology in three DT mosses from the Loess Plateau. It is a relatively simple study, but does provide important information for moss cultivation in a restoration context, though because of species-specific responses, pre-treatment environmental effects, and RH considerations during drying and dry periods, may not be widely generalizable.

Specific comments follow.

Abstract: L14. I think you mean temperature "levels" L28. cell injury seems vague here. Perhaps mention when you discuss what MDA is above

Introduction In general, you miss out on some key background research by Stark and
C1

Greenwood, who have been examining desiccation and rehydration in *Syntrichia* for years. L36. "soil fertility accumulation" is an odd phrase P2 L3. "culturing artificially" perhaps should be transposed? L6. What is this "theory"? Is this necessary to say? Paragraph starting with "Desiccation tolerance.." is hard to follow. There seems to be too many ideas in it, and the info on *Grimmia* seems oddly specific L35. Omit sentence beginning with "Actually.."

Methods Collection: Were they all growing together when they were collected? Were the different species in different microclimates? P3L25. How long did it take moss to dry? Was it different for each species? What was the RH? These are crucial points that relate to regeneration. L37. What was the equilibrating RH during storage? Also, I am unclear on the actual function of the ziploc baggies here. P5L10. Was 25 days the entire length of the regeneration study then? L11. Save for results. L12. Anaogy with seed germination is an interesting idea, but I think you're missing out on key life stages that are missing in angiosperms, like protonema. Was protonemal presence / extent quantified? What about gemmae?

Results Fig.1A is hard to interpret. Are the bars totals after the 25 day regeneration period? Table 1 and Fig 2 kind of go together, and I wished to be able to compare them more easily. Is there a way to incorporate the initial values into Fig. 2 or at least place the table closer to it? Table 4: Why not label the columns with the physiological indexes?

Discussion Careful with over-use of adverbs (Contrarily, Particularly) that don't improve sentences. Overall, while the separate sections are nice, the organization within them is a bit challenging. For example, L35 I don't think a conclusion is appropriate here. Also, in section 4.3 and others I'm noticing less time is spent discussing the current work, and more is spent bringing in related work. It begins to get cumbersome, and the reader loses sight of the key results. A general reframing to focus on key results would be helpful.

Discussion L6-7. I don't understand what the point of this sentence is.

Notes on select specific BG criteria: The paper presents some novel data, but the scope is limited. Much of the scientific methods are valid and outlined well, although the authors miss out on specific drying and storage conditions that could have influenced results more than temperature. Language could be more fluent and precise in numerous places.

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