

HESsd: Reduced transpiration without changes in root water uptake patterns in degraded trees in semi-arid afforestation ecosystems

Title: Not exactly precise. The study wants to inform about afforestation systems about susceptibility to drought. The title is too specific and also if that is the singular result it is not very novel or surprising.

Abstract:

Stable isotope method: what is that supposed to mean? Sloppy formulation

Hydrologic redistribution: How do you know? This is an interpretation based on what data?

General comment: The results are summarized in a very biased and interpreted way and the concluding sentence does not really fit the described results. Also the different methods seem to contradict each other (e.g. different indication of root water uptake pattern from soil moisture compared to isotopic approaches)

Also Clear question, rationale is missing

Introduction: The problem generally is very relevant. Reforestation is global challenge, with developing trees being more susceptible to drought especially shortly after planting compared to mature forests. The study summarizes the problem well giving an appropriate overview of existing literature. However, I fail to see what the novelty of their study is supposed to be in relation to already existing knowledge. If this is studying the root water uptake depth distributions, then they must tailor their paper much more on the plasticity advantage during drought and why this might be a key strategy also highlighting the knowledge gap more (to it seemed there is already some knowledge on this).

Specific: clear questions and hypotheses missing.

Material and Methods:

Are the tree differences (Table 1) significant between classes? ND and LD seem to be within error margin in some categories. Did you specify range in the different categories as target values for the different degradation stages or how was the evaluation procedure done?

I think this needs much more consideration: regarding degradation timing since planting, tree age and degradation intensity is very important, also why are the different spots that are in direct vicinity so different? What are differences in the soil or microclimate that might explain these? Targetting these question and conceptualizing this would greatly improve the work.

Isotope analysis: was cross referencing of the different analyzers performed? What technique did you use at the mass spec?

Results:

Figure 2: error margins in the lower panels of each plot?

Figure 4: harmonize the range on both axes. Colloring: care for problems with color blindness

Discussion:

The discussion is very much centered directly on the results in the beginning. It would be helpful to guide the reader again through the data and follow a read line revisiting central questions and hypothesis.