Comment on hess-2022-50
Anonymous Referee #2


Drought and salinity are considered to be the two main factors limiting crop productivity. Remote sensing enables the assessment of the impacts of extremes on crops, but it is seldomly used in the study of compound effects of drought and salinity stress. The novelty of this study is to assess the impacts of drought, salinity, and their combination on crop traits using multiple remote sensing observations and explore their relationships with stress timings and drought levels. The manuscript makes a contribution to the assessment of compound extremes’ impacts using remote sensing and the writing is well organized. I suggest this manuscript should be accepted by HESS after minor revisions.

Specific comments:

- In this study, only the 2018 case over the Netherlands was analyzed, are the conclusions robust? As the available data range from 2004 to 2018, are there any else cases to verify the conclusions? If there is no more cases, it is better to add the name of this case in the title.
- Add a map of the crop distribution over the study region.
- Line 89-90: The standard deviation of SPEI is 1 (Vicente-Serrano et al 2010), why do you define drought when SPEI is less than -321?
- The captions of Table 1, figure 3, and figure 4 should be described in detail, e.g. what are MD, MS, SS, ab, and abc short for in fig. 3?
- As figures 3-4 show the values of crop traits from May to September, it is better to show their standardized anomalies compared with climatology, which enables the comparison between different timings.
- What is the best explanation of the different responses among the five crop traits to such stresses?