

Hydrol. Earth Syst. Sci. Discuss., referee comment RC4  
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## Comment on hess-2022-96

Anonymous Referee #4

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Referee comment on "FarmCan: A Physical, Statistical, and Machine Learning Model to Forecast Crop Water Deficit at Farm Scales" by Sara Sadri et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2022-96-RC4>, 2022

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In this paper a study of a physical, statistical, and machine learning model to forecast crop water deficit is presented. With this model, called FarmCan, the authors show that sensing dataset like soil moisture, root zone soil moisture, precipitation, evapotranspiration can predict the needed irrigation.

This paper shows that the study of using machine learning models to improve the use of water resources for a sustainable agriculture has great potential.

Here in the following some comments to improve the presentation of the paper:

- In general some figure and tables are not very clear. If the informations in Table 1 are divide in two parts the two new figures fits orizontally and this improves the readability. Figure 6 contains al lot of informations and the colour and the bars confuse the reader: maybe also here is possbile to split the figure in two parts. Figure 7-8: I do not understand why you show the "observed variables for farmS2" separately and you don't do this for the other farms; maybe the "growth stage" (it is simply a line) is useless.

- There are really a lot of acronyms: please list them with the correspondent explanations at the end.

- Line 167: there is (?) - please correct it.

- In the abstract you affirm "...our algorithm was able to forecast crop water requirements 14 days in advance...": I do not understand why in the rest of the paper (for example figure 7-8) the predictions are up to 10 days.

At the end, my opinion is that the paper is of interest to HESS and with some minors reviews will be acceptable to the Editor.