Hydrological forecasts provide valuable information for agricultural planning and management. This paper has developed a physical, statistical and machine learning model, which is called FarmCan, to forecast crop water deficit at farm scales. One feature of FarmCan is the integration of remote sensing datasets, including soil moisture, root zone soil moisture, precipitation, evapotranspiration and potential evapotranspiration. Through the case study of four farms in Canada. The usefulness of FarmCan is demonstrated.

There are three comments for further improvements of the paper.

Firstly, there is a gap between rainfed farms and needed irrigation. Specifically, four rainfed farms are investigated in this paper (Lines 85 to 86) and the attention is paid to the needed irrigation (Lines 107 to 112). It is noted that rainfed and irrigated systems are two distinct approaches to agricultural production and that irrigation is generally not involved in rainfed systems. Please clarify the issue of needed irrigation in rainfed farms.
Secondly, the irrigation if applied would augment soil moisture and then affect evaporation. In Eq. (1) on Page 7, the needed irrigation is calculated by using evaporation and soil moisture. The calculation seems to mix independent and dependent variables. Specifically, from the perspective of statistical modelling, if $x$ depends on $y$ then it may be improper to regress $y$ against $x$.

Thirdly, the algorithm of FarmCan accounts for 4 phenological stages of crop growth (Lines 179 to 180). It is known that crop water requirements vary by the different stages even under the same background climate (https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/crop-water-requirement). In addition, the analysis involves multiple crops, including soybeans, oats, spring wheat, etc. Please illustrate how the different crops and crop growth stages are considered under the same framework of FarmCan. Given that there are numerous combinations of crops/stages, can the data presented in this paper provide enough samples to train the FarmCan? How are the sampling variability and parametric uncertainty for the FarmCan?

Below are a few minor comments:

- Please add a flowchart of the steps of data processing and the dataset involved.

- In Fig. 9, it seems the uncertainty ranges are determined by linear regression models. Can the FarmCan quantify the uncertainty by itself?