Biogeosciences
Discussions

Interactive comment on "Importance of crop varieties and management practices: evaluation of a process-based model for simulating CO_2 and H_2O fluxes at five European maize (*Zea mays* L.) sites" *by* L. Li et al.

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General Comments:

This is an important and interesting study that assesses the impact of different management practices and crop varieties on carbon and water fluxes from few European sites with maize. Overall, it is a comprehensive and very useful study. It provides some novel findings and further investigates the performance of ORCHIDEE-STICS as an agricultural, process-based model.

Specific comments:

P 2915 L 11: You mention 'The results show that ORCHIDEE-STICS has a good potential to simulate energy, water vapor and carbon dioxide fluxes from maize croplands..'. Since the study analyzes only latent heat flux (and not sensible heat flux), pl. replace 'energy, water vapor' with either 'latent heat' or simply delete 'energy,'.

P 2915 L 28: The sites considered in this study have only maize (It does not consider all European croplands which obviously have other crops, as well).

P 2922 L 7: Please provide some information relevant to the simulations (e.g. what was the model time step? Any soil data used? It seems like the site-measured meteorological data were used to drive the simulations (Please mention it). Any other input information?).

P 2925 L 3-9: Including all these R^2 and RMSE corresponding to each variable in a table would be better.

P 2926 L 16: One other reason that could contribute to the mismatch of LAI and high cumulative GPP towards the late growth period is that you consider a longer growing season than what is observed (e.g. You consider the same observed harvest date even with a prescribed planting date which is 25 days earlier than the observed one, under the early planting scenario).

P 2930 L 5-6: It will be useful to include variety-specific GDD thresholds and the parameter values from the model in a separate table (probably referring to that table on p 12, where you mention about the variety-specific parameter values).

P 2930 L 8-26: It would be better to include this information within the subsequent paragraphs where you describe Fig. 8 and Fig. 9 separately (with some editing and concatenating).

Technical corrections:

P 2933 L 12: Replace 'differ' with 'differs'.

P 2933 L 23: You mean 'largely' (not 'large')?