

Interactive comment on “Morphological plasticity of root growth under mild water stress increases water use efficiency without reducing yield in maize” by Qian Cai et al.

Anonymous Referee #1

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The manuscript focused on yield and water use of rain-fed maize in semi-arid region where the summer drought frequently occurs. For high yielding of maize, the government or farmers are hard to make a decision on whether the irrigation systems is economically necessary, especially under climate change. The paper has a good experimental design by a mobile rain shelter. The results are interesting and valid. Suggestions: (1) provide more informative discussion on the economic analysis of the necessity of irrigation systems. What is current situation, how much area of maize can be irrigated at the time of drought occurrence in rain-fed agriculture, for example at study region, how often was this system used, and how much is the cost. (2) Add the long-term rainfall data and the trend under climate change scenarios. This results would

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help readers to understand the severity of summer drought.

Detail comments: L78, delete 'Interestingly'. L101-104, give information on the data is averaged from which years. L106-107, since the experiments were conducted under a rain shelter, the detail rainfall in experimental years is not useful, delete. L236, delete 'for'. L295, change 'would increase' to 'increases'. L301, replace 'interesting evidences' by 'more evidences' L442, Table 2, ears plant-1; Kernels ear-1. L445, Figure 1, Capitalize M in legends as 'Maximum air temperature'.

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