A logo of a college

Description automatically generated

Department of Biological Sciences

Texas Tech University

Lubbock, TX 79409

Pawan Devkota

Tel. (806) 283 7923

ddevkota.pawan@gmail.com

Jul 31, 2024

Dear Editors,

It is my pleasure to submit our manuscript “Residue addition and irrigation can mitigate soil health challenges with climate change: Insights from a field warming experiment in semi-arid Texas” for your consideration for publication in a special issue of the Soil systems.

This manuscript discusses the results from a field warming experiment in the cotton fields and shows how residue addition and irrigation strategies can help to mitigate the soil health challenges, especially loss of soil carbon (organic matter and microbial carbon) in the semi-arid environment during future projected climate change.

The agriculture in West Texas region in the US, as well as other semi-arid regions in the world are challenged by severe climate extreme events resulting into increased incidences of heat and drought stress in plants. These events are expected to be more frequent and severe in future. Therefore, finding soil management practices that enable soils to hold on to more moisture or sequester more soil carbon is key for the sustained crop production in dry environments. In this manuscript, we show that the crop production in the semi-arid regions is more sensitive to moisture stress than temperature stress. So, soil carbon stock and crop production could be improved by adopting irrigation management strategies. We also conclude residue addition could buffer soil temperature and help to compensate for the warming induced carbon loss through increased decomposition, improved microbial growth especially in the non-irrigated drylands.

Our manuscript fits the scope of your journal as it mainly focusses on the different dynamics of organic matter and climate warming and soil management practices affects the soil carbon storage in the in the cultivated soils which is in line with the journal’s major subject areas. We believe the findings will interest the readers of your journal.

We confirm that the manuscript has been reviewed the by all authors and have agreed to submit for publication to Soil Systems. We also confirm that neither the manuscript not the any parts of its content are currently under consideration for publication in another journal.

Please do not hesitate to contact me with further questions.

Sincerely Yours,

Pawan Devkota