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# Insights into how controlled drainage, subirrigation affect yield

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*Lead author Navdeep Singh (left), Edward James Scheenstra, and Alexis Leigh Perez collect soil samples for texture analysis at a grower's field having controlled drainage and subirrigation infrastructure. Photo courtesy of Gabriel T. LaHue.*

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Controlled drainage and subirrigation (CDSI) is an important water management strategy in many regions. But the conditions under which CDSI is most likely to increase crop yield and soil moisture are not fully understood.

In a recent article in *Vadose Zone Journal,* researchers using a meta-analytical approach examined how crop yield and soil moisture responded to CDSI. They investigated how crop type, soil texture, and cumulative growing season precipitation influence these responses and identified potentially suitable regions for CDSI in the U.S. The research team found that CDSI has the potential to increase crop yield, but the magnitude of this benefit may vary based on soil texture and the amount of rainfall during the growing season. Benefits would most likely be observed in medium-textured soils (loam, silt loam, etc.) and in regions that receive less rainfall during the growing season. No clear effect of CDSI on soil moisture was found although this may be attributed to the scarcity of studies on CDSI reporting soil moisture.

While potentially suitable areas are mostly concentrated in the well-studied U.S. Midwest, potentially suitable areas also exist in other regions where CDSI may warrant further study.

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Singh, N., Kogan, C., Chaudhary, S., Rajagopalan, K., & LaHue, G. T. (2022). Controlled drainage and subirrigation suitability in the United States: A meta-analysis of crop yield and soil moisture effects. *Vadose Zone Journal*, e20219.

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