
Subsurface Irrigation Efficiency Project

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The Subsurface Irrigation Efficiency Project (SIEP) focuses on the use of innovative subsurface irrigation technologies to increase water efficiencies in agriculture and residential turf growth.

SIEP is a 165 acre facility located about 15 miles east of Greeley, CO. The facility is sponsored by the United Water and Sanitation district with research performed by faculty and graduate students from the Colorado State University. The facility includes a state-of-the-art research building, an on-site weather station maintained by CSU through their CoAgMet program, and 82.5 acres of land under subsurface drip irrigation.

SIEP improves efficiency in agriculture through the use of subsurface irrigation. Subsurface irrigation provides crops their irrigation water directly to the root zone, which eliminates water lost to evaporation and run-off.

Subsurface irrigation is between 95-98% efficient in delivering water to the crop compared to traditional pivot and flood irrigation techniques that are between 35-40% efficient and 15-20% efficient, respectively. Replacing a traditionally irrigated pivot with subsurface drip-irrigation has been shown to reduce crop-water applications by nearly 40% while increasing historical yields. A subsurface irrigation system can also utilize entire quarter sections and mis-shapen plots compared to traditional pivots, which may cut off the corners.

The SIEP project also includes a residential turf demonstration to show how subsurface irrigation technology can be utilized by residential users. Adoption of this system by municipalities could reduce lawn and parks irrigation use by up to 50%, which, in turn, reduces the stress placed on agricultural water supplies to help meet municipal demands.

Wide spread implementation of highly efficient irrigation technologies, coupled with legislation authorizing Alternative Transfer Methods, could be a key piece to the puzzle of solving Colorado's water shortage challenges.

You can learn more about SIEP by visiting the website at www.siepwater.com.