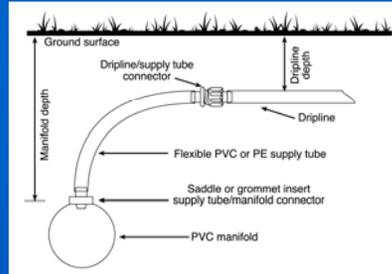


What is SDI?



Freddie R. Lamm, Research Agricultural Engineer

Subsurface drip irrigation (SDI) is a type of microirrigation where water is applied to the crop root zone below the soil surface by small emission points (emitters) that are in a series of plastic lines typically spaced between crop rows. The discharge rate of the emitters is usually less than 2 gallons/hour.

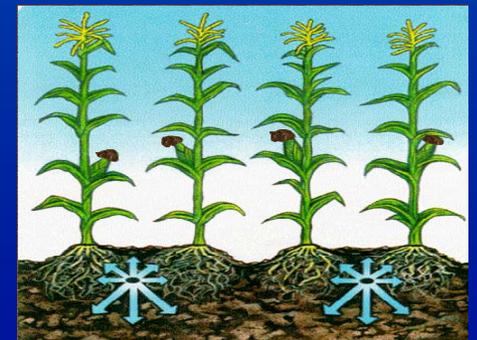


SDI is not the same and should not be confused with subirrigation. Subirrigation applies water below the ground surface by raising the water table to within or near the root zone. There is little or no subirrigation in the Central Great Plains.

Although surface drip irrigation (DI) is presently used more widely than SDI, it is generally thought that microirrigation was first applied below the soil surface. The first experiments with SDI began in the 1860s in Germany where short clay pipes with open joints were used to provide both irrigation and drainage. **The earliest SDI research in the United States that did not use subirrigation techniques was conducted at Colorado State University in 1913 by E. B. House, who concluded that it was economically impractical.**

SDI has been a part of modern agricultural irrigation since the early 1960s. Investigations of both SDI and DI with citrus crops and potatoes were conducted by Sterling Davis, an irrigation engineer with the United States Salinity Laboratory, in 1959. At about the same time in Israel, Symcha Blass was reporting early experiences with SDI. SDI performance was often plagued by problems such as emitter clogging (chemical precipitation, biological and physical factors, and root intrusion) and poor distribution uniformity. However, as improved plastic materials, manufacturing processes, and emitter designs became available, resurgence in SDI occurred, both in research activities and commercial operations.

The principal reason SDI is of interest in the Great Plains rather than DI is because subsurface installation allows the producer to amortize the SDI system for a longer period of years, an important aspect with low value crops such as corn and cotton.



Could it work for you?