



Advantages of KISSSS over sprinkler and conventional buried drip systems used with recycled water

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KISSSS is the most advanced subsurface irrigation system presently available in the world.

The system overcomes some of the main deficiencies of traditional drip pipe by transforming the drip line from a point to a continuous source. This is achieved through a clever arrangement of four component parts:

1. Drip line. The system utilizes and improves the performance of the very best drip pipe technology.
2. A geo-textile layer covers the drip line to assist lateral and longitudinal spread of water. This material conducts water 13000 times faster than soil.
3. A plastic tape glued on the geo-textile above the emitters deflects the discharged water and prevents tunneling into the surrounding soil.
4. An impermeable polyethylene base membrane under the drip line that restricts drainage and encourages longitudinal spread of water.

The KISSSS design provides important health and safety advantages when using recycled water compared with sprinkler and conventional buried drip. They include:

Advantages over Sprinklers

- Reduced health risk. No aerosols, surface pooling of recycled water, accidental ingestion, contamination of fruit and vegetables as well as turf, soil and other surfaces.
- Fixed location of KISSS lines ensures recycled water is dispersed over the full extent of the designated disposal area (maximizing ET losses and minimizing movement of nutrients into ground water). Currently, householders are required to move a short sprinkler hose at frequent intervals to achieve the necessary distribution. This is currently not policed.
- No spray drift means that the KISSS system can be safely installed closer to dwellings and fence lines. The area gained could be significant for householders on small blocks.
- More uniform distribution of effluent over the disposal site means higher evapo-transpiration losses, lower drainage losses, more effective biological treatment of effluent (lower ratio of effluent to soil volume) and larger storage in soil.
- Chlorination is less important (may not be required) because the effluent is released below ground where pathogens are inhibited/killed by soil micro-organisms.
- KISSS may be used to safely disperse untreated effluent from septic (non-aerated) systems.
- KISSS can be operated even when the disposal area is in use without risk to the public.

- KISSS is entirely below ground and less susceptible to vandalism

Advantages over Drip Line

- More uniform distribution of water in the soil increases the P sorption life of the disposal area. Where the distribution is not uniform, the soil in those regions receiving the highest volume of effluent will become saturated with P first. In other words, the disposal area will become leaky well before the full sorption capacity of the site has been exploited. This phenomenon could be called “point source leakage”.
- No tunneling means no water can reach the surface without some biological filtering by the soil. Tunneling occurs when water from a conventional buried drip pipe produces an open channel to the surface by a mining process. Once a tunnel has formed it cannot easily be removed even when the overlying soil is cultivated. Where tunnels exist, a puddle of contaminated water will appear on the surface every time there is irrigation.
- Wider and more uniform soil wetting pattern ensures the surface conditions are more stable under foot. Conventional drip pipe systems discharge water at rates that are much higher than the soil can accept producing soggy areas.
- Geo-textile cover helps to prevent roots from blocking emitters.
- CNL drippers and non return valves on lines prevents blockage of emitters by soil through suck back.

For more information on KISSS capillary irrigation products for turf contact:

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