



Drip Irrigation: Issues

Drip Irrigation

Drip irrigation is often recommended because of the potential to save water. However, there are a number of potential issues that should be considered.

1. **Water quality.** Emitters may be blocked if the irrigation water has 1) sediment, 2) algae, 3) fertilizer deposits and/or 4) dissolved chemicals which precipitate (e.g., calcium and iron). Filters are required to keep sediment from clogging emitters.
2. **Equipment loss.** Drip irrigation requires expensive equipment and these can be targets for theft.
3. **Sloping land.** Drip irrigation over slopes requires pressure compensating drippers and shorter lateral lines to give uniform water distribution.
4. **Maintenance.** Drip irrigation requires constant maintenance (often more than other irrigation systems to check for blockage of emitters and/or damage by farm implements, garden tools, insects, rodents, etc.).
5. **Cost of Installation.** Initial installation costs of drip irrigation are typically more than that for other irrigation systems. Besides initial one time capital costs there are annual maintenance and replacement costs.
6. **Land holding size.** Installation costs of drip systems are proportionately higher for small land holdings compared to larger land holdings, as the pump, filters and valve requirements do not necessarily vary much with land holding size. Systems are often unaffordable for small scale farmers (e.g., < 1 hectare), although gravity drip systems may be an option.
7. **Weed control.** Surface pipes can create problems for mechanical weeding and drip irrigation is a problem if herbicides need irrigation for activation.
8. **Soil effects.** Sandy soils require water more frequently and at a higher rate of flow than clay soils. System design without consideration of soil type can result in inadequately irrigated plants or wasted water due to surface runoff or deep percolation.
9. **Weather.** Sunlight can shorten the life of drip irrigation tubes. In colder climates, while tubing is not harmed by frost, other equipment like pumps, timers, fittings and connectors can be damaged in freezing weather.
10. **Plant growth.** Drip irrigation does not wet foliage to provide possible cooling effects during hot weather. Tubing is black and water remaining in above ground lines can become hot enough to damage young plants when systems are restarted. Drip systems do not promote extensive root systems that are deep and wide. The resultant shallow-rooted systems may be prone to drought and lodging by wind. When subsurface emitters clog, they are often only noticed after the plant is under stress.
11. **Power availability.** Many drip irrigation systems require electricity. Limited or irregular power supply can limit this technology.



Photo: Curran Hughes

Mineral deposits clogging a drip emitter - a result of hard water.



Photo: Curran Hughes

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