

30% yield increase in vegetable crops with drip irrigation, even in its humid, summer-rain climate.

A study in Sri Lanka in 2002, found that with chilies, water use was down 34–50%, while production was up 33–48%. The researchers attributed this to irrigation that kept the soil moist, not too dry.

A study in New Mexico found amazing differences in yields compared to [respectively] furrow and drip irrigation: 18 pounds versus 30 pounds with cucumbers, 69 to 156 pounds growing Swiss chard, and 64 versus 166 pounds with green beans—to quote a bit of the study. [It is interesting to note that broccoli, Brussels sprouts, and carrots didn't have any greater yields in the drip irrigation plots. Yet, a study at Oregon State University found a 20% increase in carrots compared to plots with sprinklers.]

- **Provides better control of saline water.**

Sprinklers apply water to the foliage; if your water is saline, this can cause leaf burn. Drip irrigation applies water only to the soil, and frequent applications with drip irrigation help to keep the salts in solution so they don't affect the roots adversely. [Any salt crust buildup at the margins of the moist area can be leached away with an occasional deep irrigation.]

- **Improves fertilization.** With a device called a fertilizer injector (or proportioner), you can easily apply dissolved or liquid fertilizers with accuracy and without leaching the fertilizer beyond desired root zones. The liquid fertilizers can be applied with each irrigation or only when required.

- **Encourages fewer weeds in dry–summer climates.** The small moist spot around each emitter, where the water slowly dribbles out, covers only a fraction of the soil's surface. The larger dry areas between emitters remain too dry

for weed seeds to sprout.

[NOTE: This benefit is lost in areas with summer rains.]

- **Saves time and labor.** Drip irrigation systems eliminate tedious and inefficient hand watering. Automatic drip systems add the convenience of not even having to remember to turn valves on and off by hand. (The initial installation of such a system, however, will take more time and effort than all other forms of irrigation except permanent sprinkler systems.)

- **Eliminates soothing hand watering.** For some gardeners, the act of standing out in the garden near sunset and watching the moon rise, listening to the mockingbird warble, and rhythmically swaying back and forth with a hand-held sprinkler is more valuable than any form of therapy or meditation. For these people, drip irrigation may be counterproductive.

- **Reduces disease problems.** Without the mist produced by a sprinkler, drip-irrigated plants are less likely to develop water-stimulated diseases such as powdery mildew, leaf spot, anthracnose, shothole fungus, fireblight, and scab. Furthermore, careful placement of emitters away from the trunks of trees, shrubs, perennials, and vegetables will keep the crown of the root system dry and minimize such root problems as crown rot, root rot, collar rot, and armillaria root rot.

- **Provides better water distribution on slopes.** Sprinklers often create wasteful runoff when set to water the upper slopes of hills or berms. Drip emitters can apply the water slowly enough to allow all the moisture to soak into the soil. Some emitters, known as pressure-compensating emitters, are designed to regulate the water flow so that all emitters in the system put out the same gentle flow, regardless of slope.

- **Promotes better soil structure.** Heavy sprinkler irrigation can produce puddles, causing