Using Table 2C, the available water would become 235 gallons per 100 drippers, or 2.35 gallons per plant.

Now assume that the emitter spacing is changed to 8 inches, the wetted depth remains at 12 inches, and the wetting pattern approaches the half cylinder shown in Fig. 7. Using Table 3, the available water would be 59 gallons per 100 feet. If plants were spaced 24 inches apart, a 100 foot length of bed would contain 50 plants, and each plant would have 1.18 gallons of available water. It is important to remember that these examples assume that the roots are distributed within the wetted soil volumes and that the plant has full access to the applied water.

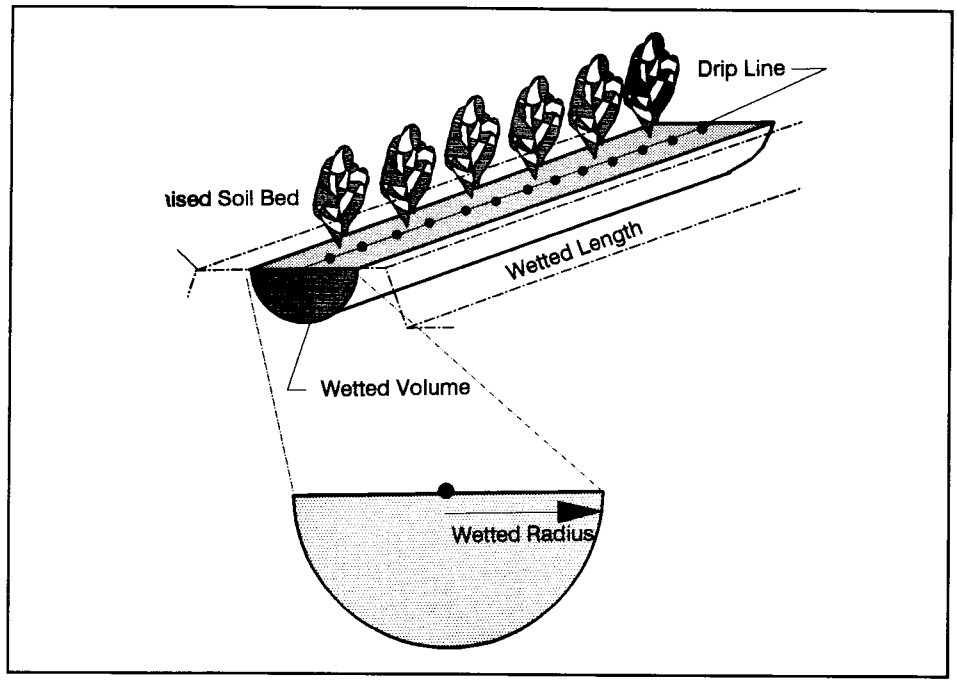

Figure 7. Horizontal half-cylinder water distribution pattern from closely spaced drip emitters or line-source drip tubing operated for short run times.

Evaporative Demand and Volumetric Water Use

Estimates of potential evapotranspiration obtained from calculations using measured weather data, measured pan evaporation, or from historical data bases is reported in units of depth (inches) of water use over the irrigated area. This unit is appropriate for scheduling irrigations with an overhead irrigation system that also applies water in inches. However, drip systems apply water in volume units such as gallons per 100 feet of row or gallons per plant. Therefore, it would also be convenient to know the crop water requirements in gallons per plant or per 100 feet of row. Tables 5 or 6 can be used to convert from inches of crop water requirement or water application depth to volume units. Table 5 converts from inches of depth to gallons per 100 feet of plant row based upon plant bed spacing. Table 6 converts from inches of depth to gallons per 100 plants, and is based upon the plant population in number of plants per acre.

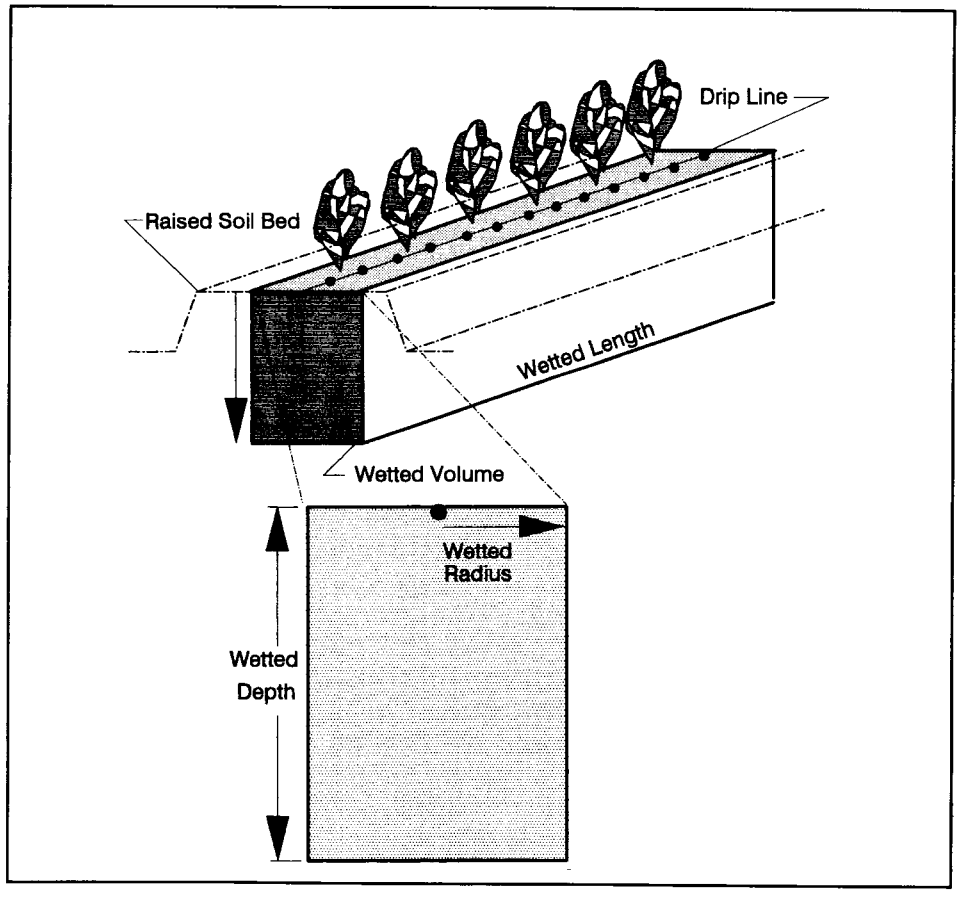

Figure 8. Rectangular block water distribution pattern from closely spaced drip emitters or line-source drip tubing operated for long run times.