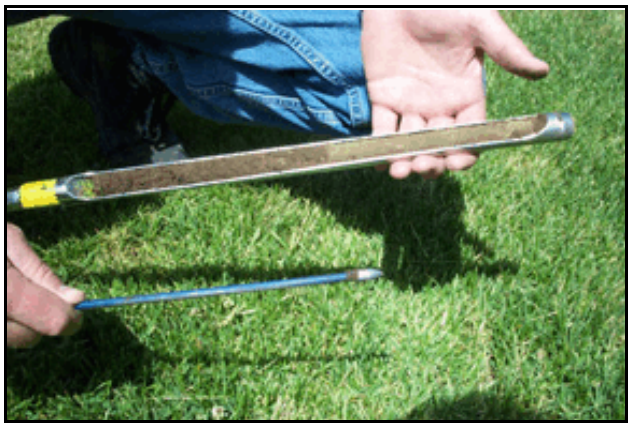
MONITORING IRRIGATION WITH PROBES

Use a tile probe 1 to 2 hours after irrigating to monitor the depth of water movement. A tile probe enters moist soil easily. Resistance increases noticeably when the probe encounters dry soil. Stop applying pressure when resistance increases to a level where the probe begins to flex. Grasp the probe at ground level and remove it, noting how much of the probe was below the surface. This is an estimate of the depth of water movement. Sample in several locations to estimate the average depth of water movement. Using tile probes takes some practice; however, once you are accustomed to these devices you can rapidly and accurately assess the depth of water movement in soil.

Use an open-faced probe to remove intact soil cores. Before irrigating, sample in several locations and inspect the soil to determine if it is dry or still moist from the previous irrigation. One to 2 hours after irrigating remove intact soil cores from several locations and look for a color change (dark to light) between wet and dry soil. This color change indicates the depth of water movement.

When irrigation is applied frequently and for short periods of time, it is common for soil to be wet to a depth of only 2 to 3 inches. Over time this limits plant rooting depth to a shallow surface layer. Additional water is needed to wet the soil to a greater depth and encourage deeper rooting. Less frequent but longer irrigation will help. If the depth of wetting exceeds 12 or 18 inches, the water is likely to move beyond the roots of many plants. For lawns, 6 to 12 inches of moist soil is sufficient. Gardens and established trees often root deeper than turf and can tolerate less frequent irrigations with more water to increase the depth of wetting to 24 inches (2 feet).



Both soil and tile probes show similar depths of water movement (~ 6 inches in this example).

Tile and soil probes can also be used to monitor the uniformity of irrigation and determine if maintenance and improvements might be needed. Check the wetting front depth around and between sprinkler heads. If the depth varies, inspect sprinkler output rates and distribution using irrigation catch cups available from Utah State University Extension offices. Make improvements where necessary.

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