Watering Vegetable and Flower Gardens

Best Management Practices

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There are many variables to consider when trying to determine when and how much to water vegetable gardens, flower beds, and perennials. As a general rule, beds should be watered when the top several inches of soil is dry. Dig down 2 to 4 inches with a trowel to determine if soil needs additional water. Dry soil will not hold together to form a ball.

If water is needed, thoroughly moisten the soil to a depth of 6 to 8 inches. In well amended or prepared soil, this should take 1 to 2 inches of rain or irrigation. Check rainfall amounts to ensure that moisture is adequate. Consider watering after a light rain to to take advantage of nature's contribution. Mulching beds also helps conserve moisture and extend the irrigation interval.

Soil type influences water infiltration rate, holding capacity, and root establishment. A good root system improves the plant's ability to take up water. Amending the soil with organic matter such as compost, peat moss, cotton burr, or manure opens heavy soil so it can receive moisture more readily. It helps sandy or porous soil retain moisture. Vegetable gardens should only be amended with manure in the fall after crops have been removed.

When daytime temperatures average 85 degrees, water clayey soils once a week with 1 to 2 inches of water, unless rainfall is adequate. If necessary, water in increments, applying ½ inch at a time and waiting 30 minutes between waterings. This allows clayey soils to absorb water without ponding on the surface. Trickle irrigation usually applies water slowly enough so it absorbs without ponding or running off. During warm weather, water loamy soils approximately every 5 to 7 days with 1 to 2 inches of water. Water sandy soils twice a week. These recommendations are an average and vary depending on the site and environmental conditions. Watch plants and adjust amounts and frequency as needed.

The plant population also influences the amount of water needed to sustain a growing bed. The more plants growing in a given area, the greater the demand for water. Spacing plants further apart but within optimum parameters requires less water. An ideal plant population allows foliage to overlap, shading soil between plants and reducing evaporation from the soil's surface.

When planting gardens or flower beds from seed, water thoroughly after planting to establish a reserve in the top few inches of soil. Keeping the seed bed moist supports germination and softens soil, allowing seedlings to emerge. Apply ¼ inch of water daily – early in the morning or in the evening – for the least amount of evaporation. Lightly cover the planted seedbed with sand, compost, or potting soil to help seedlings emerge, and distribute moisture evenly around the seed.

At planting time, water vegetable or flower transplants with a water-soluble starter fertilizer solution at one-half rate to settle soil around the root system. Water new transplants every two to three days for the first two weeks. Decrease watering to twice a week for the

third and fourth weeks to encourage root establishment. When growth is observed, begin watering at recommended intervals, factoring in rainfall amounts and soil type.

High temperatures, wind, and slopes also determine moisture retention. High temperatures and wind lead to water loss from evaporation. Water runs off steep slopes unless applied slowly or in increments. Add ¼ inch of water at a time, and allow 30 minutes between waterings. Repeat irrigation and give water time to percolate through soil particles until adequately moist.

Do not expect to thoroughly water established plants in a vegetable garden or flower bed with a handheld hose. Overhead watering of garden or landscape plants during the hottest part of a sunny, mid-summer afternoon will not damage plants by magnifying sunlight through water droplets. In fact, cool water moderates stress associated with intense afternoon heat. Spraying plants with cool water is sometimes used as a cultural practice for that purpose.

When irrigating garden or landscape plants with a garden hose, be sure water is cool before applying. A garden hose left on the ground retains water that heats in the sun and may scald foliage. If the hose was left at the base of a plant, hot water may damage roots of sensitive plants. Water allowed to pond on the bed's surface also can reach scalding temperatures.

Water with a high salt content is damaging. The soil testing laboratory at K-State can test irrigation water for salinity. Water tainted by salt or chemicals and flushed onto plants from adjacent surfaces can also cause damage.

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