How to Deal with
Heat and Drought in the

EDIBLE GARDEN

Ag for Life

Heat and Drought in the Edible Garden

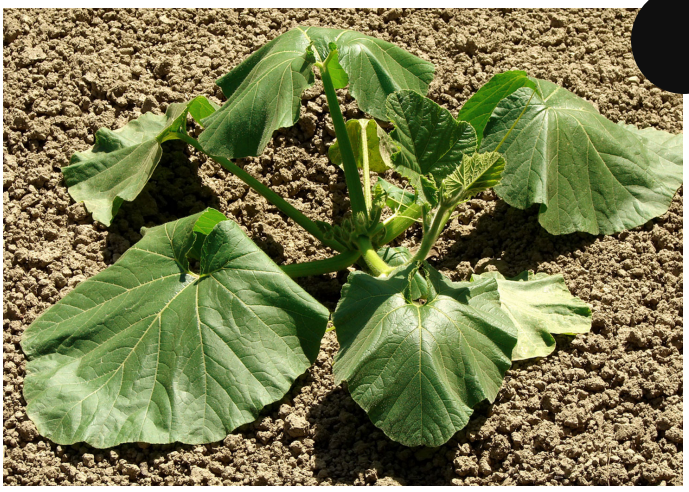
By the time the middle of summer rolls around, the plants in your garden may be really feeling the heat and lack of water! The signs of heat and drought stress in plants in your edible garden may appear very much alike, but the two problems are not the same.

Signs of Heat Stress

Heat stress occurs when ambient and soil temperatures are higher than individual plants can withstand. Heat stress can occur over the course of a few hours, several days, or even weeks. Plant stems may droop and the leaves will wilt due to excessive water loss during transpiration (when water vapour is released by plant leaves). The foliage of plants may turn from yellow to brown and crispy if the temperatures do not cool sufficiently, and plants may drop leaves in a desperate attempt to try to conserve water.

Plants may not be able to photosynthesize efficiently, leading to stunted growth. Plants such as beans and tomatoes may fail to produce flowers or fruit – or if they do, the flowers or fruit may be deformed. Crops that prefer cooler weather, such as spinach, broccoli, and radishes, will bolt (flower, then go to seed). The flavour of those crops will be adversely affected.

If the intense heat is combined with too much water (either from rain or supplemental irrigation), there is a greater chance that plant roots may rot. The risk of fungal or bacterial diseases and nutrient deficiencies increases.



Signs of Drought Stress

When plants do not receive enough water according to their individual needs, they experience drought stress. Similar to heat stress, signs of drought stress may include wilting and discolouration or darkening of plant parts, such as leaves and flowers. Plants may stop growing, or fail to produce flowers and fruit. Leaves may fall off prematurely. Eventually, if the drought is prolonged, the plants may dry up completely and die. Fortunately, if you catch the problem in time, most plants perk up right away.

How to Deal with Heat and Drought Stress

Your first instinct if you see the leaves of your plants begin to wilt is to bring out the watering can, but remember that hot plants are not necessarily dry plants. Test your soil before you decide to water with a water probe, or simply stick an index finger into the soil down to the first knuckle. If you do not feel any moisture, your plants need a drink. Remember that containers and raised beds will tend to dry out more quickly than in-ground beds. They may need to be watered more than once a day. Maintain a balance, however, and be extremely careful not to overwater, to prevent issues such as rot and mould.

Water deeply, so that the water reaches the roots. Frequent shallow watering does not sufficiently direct water down to where it is needed, and will promote poor root development. The plant will remain susceptible to drought and heat stress. Some plants need more water than others. Tomatoes, with their huge root systems, are one example of a very thirsty plant! Tailor your watering schedule to accommodate plants that require plenty of water.

Water in the morning, if you can. Watering in the middle of the day will result in a lot of evaporation and be of very little use to your plants. A drip irrigation system set on a timer is your best watering option.

Fertilizing when plants are suffering from heat or drought stress should be avoided. Sufficient water is needed for plants to properly uptake and utilize nutrients from the soil. Once the plants have rebounded, then you can resume your regular fertilizing routine.

How to Deal with Heat and Drought Stress

Adding a five centimetre (two-inch) layer of mulch – either clean straw or herbicide- and weed-free dry grass clippings – can help conserve water at the base of plants, as well as moderate soil temperatures. Do not pile the mulch right up against the stems of plants, as that encourages rot.

Consider the health of your soil. Hard, compacted soil impacts the ability of plants to properly uptake water and nutrients, and this problem is magnified during times of high heat and drought. Try adding organic matter such as compost to promote a looser, more friable soil texture.

If you have plants in containers and they are easy to move, consider pushing them into a shadier location during times of extreme heat. Raised and in-ground beds may be covered with lightweight shade cloth (available at greenhouse supply stores) or floating row cover. The fabric may be stretched over hoop tunnels or tented over the garden with stakes and landscape pegs.

Keep up with the weeding! You don't want weeds to use up any available water in the soil that could be going to your cultivated plants.

If certain plant parts dry up due to drought or heat stress but the rest of the plant survives, you can carefully trim away the affected leaves or stems. Never remove more than one-third of the plant at any time.
Heat and drought stress can cause your plants to be more susceptible to a range of pests and diseases, so be sure to carefully monitor them for signs of trouble and take action if needed.

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