

THE GRAPEVINE

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FLOODING DAMAGE

Due to our recent deluge this week is about dealing with flooding

Waterlogged soils push out oxygen that roots need to survive. Every living cell in a plant must have oxygen or it dies. Some plants have mechanisms to provide oxygen to the roots even under saturated conditions but most of our vegetables and flowers do not. The longer these plants are subjected to saturated soils, the more likely damage will occur. Usually, as long as water drains away within 24 hours, the impact on plant health is minimal. However, shallow, stagnant water under hot, sunny conditions can literally cook plants, reducing survival time to a few hours.

Vegetables: What about safety regarding eating produce from a garden that has been flooded? Standing water should not cause a safety problem as long as the aboveground portions of the plant remain healthy. Do not use produce from plants that have yellowed. Also, using produce flooded with water contaminated with sewage (lagoon) or animal manure can also be dangerous.

The safest approach is to discard all garden crops that have been in contact with such water. Certainly, leafy vegetables should always be discarded. However, you may eat fruit from such crops as tomatoes, peppers, eggplants, sweet corn, squash, cucumbers, and similar vegetables that develop after the waters have subsided as long as the fruit is not cracked or soft. Always wash vegetables thoroughly before eating.

Lawns: Under the cool conditions of early spring, turf grasses can often survive several days of flooding. However, during hot, sunny conditions with shallow, stagnant water, lawns may be damaged quickly, sometimes in a few hours. This situation often occurs when shallow depressions in a lawn allow water to pool. Note such areas and fill in with soil once the waters have subsided. **Too Wet to Mow the Lawn:** What do you do when the lawn can't be cut because of constant rain?

The best thing to do is to set your mower as high as possible and bring it down in steps. It's best never to take more than one third of the grass blade off at one time. However, sometimes it is just not possible to keep the "one-third rule." In such cases, cut as high as possible even though it may mean you are cutting off more than one third of the blade. Bring the height down gradually by cutting more often and at progressively lower heights until you reach the target height.

Trees: Trees differ markedly in their ability to withstand flooding. Some trees have mechanisms in place to provide oxygen to the roots of plants with water saturated soils and others do not. However, most trees will maintain health if flood waters recede in 7 days or less. It also helps if water is flowing rather than stagnant as flowing water contains more oxygen. If the roots of sensitive trees are flooded for long periods of time, damage will occur including leaf drop, iron chlorosis, leaf curl, branch dieback, and in some cases, tree death. Another danger of flooding is the deposition of sediment. An additional layer of silt 3 inches or more can also restrict oxygen to the roots. If possible, remove deep layers of sediment as soon as conditions permit. This is especially important for small or recently transplanted trees. Try to avoid any additional stress to the trees this growing season. Ironically, one of the most important practices is to water trees if the weather turns dry. Flooding damages roots and therefore the root system is less efficient in making use of available soil water. Timely waterings are vital to a tree's recovery. Also be diligent in removing any dead or dying branches which may serve as a point of entry for disease organisms or insect pests. The following information on tree survival came from the US Forest Service.

Trees Tolerant of Flooding: Can survive one growing season under flooded conditions. Red maple, silver maple, pecan, hackberry, persimmon, white ash, green ash, sweetgum, sycamore, eastern cottonwood, pin oak and bald cypress.

Trees Moderately Tolerant of Flooding: Can survive 30 consecutive days under flooded conditions. River birch, downy hawthorn, honeylocust, swamp white oak, southern red oak, bur oak, willow oak and American elm.

Trees Sensitive to Flooding: Unable to survive more than a few days of flooding during the growing season. Redbud, flowering dogwood, black walnut, red mulberry, most pines, white oak, blackjack oak, red oak and black oak.

After the Flood: Soils often become compacted and crusted after a heavy rainfall. This also can restrict oxygen to the roots. Lightly scraping the soil to break this crust will help maintain a healthy root system and therefore, a healthy plant. Be careful not to cultivate too deeply as shallow roots may be damaged. These damaged root systems will make careful watering crucial. Watering will be needed if plants start to wilt after the soil starts to dry. This may come quicker than expected due to the damaged root system.

Helping Roundup (Glyphosate) Products Work

Though glyphosate products (Roundup, Killzall, Pronto Weed & Grass Killer) are non-selective and will kill most plants the spray contacts, these herbicides are not taken up by the roots of nearby desirable plants. This is because the active ingredient is neutralized when it contacts the soil due to being tightly bound to soil particles. Unfortunately, this binding effect can also take place in hard water that is high in magnesium and calcium, which reduces its effectiveness. To avoid this, mix ammonium sulfate with your spray water before adding the glyphosate product. The ammonium sulfate ions tie up the calcium and magnesium ions so that the glyphosate remains at full strength. Also some of the glyphosate will form a compound with the ammonium that weeds will more readily absorb, thus increasing effectiveness. Note that this binding effect takes place in hard to very hard water (above 7 grains or above 120 ppm). Adding ammonium sulfate to softer water will not help. So if you have your water tested and find you have hard water, how much ammonium sulfate should you add? As a general rule, add 8.5 pounds per 100 gallons. This would equal about 1.4 ounces per gallon or four tablespoons per gallon.

How to Make Tomato Cages

Commercial tomato cages are often too wimpy for Kansas conditions. Fortunately, you can make your own cages from concrete reinforcing mesh (wire). This material is normally 5' high with the "mesh" forming 6" squares. The shortest rolls are usually 50' long, but some lumber yards will cut off just the amount you need. Figure 6.5 feet of mesh to complete one cage that is 2 feet in diameter. You will need to cut the mesh in order to make the cages. Small bolt cutters work well for this. Be careful when cutting as the mesh comes in rolls that will spring back into a cylinder as the last cut is made. Count off 13 squares but cut each horizontal wire at the end of the 13 square. This will leave a series of 12 complete squares horizontally with prongs left on the 13 square. Use these prongs to make a cylinder by bending the prongs over the vertical wire on the first square. Cages using this method will be about 2 feet in diameter. Tomatoes with large, rangy vines need all five feet of the mesh, but those with shorter, semi-determinate vines can get by with a shorter cage. Also, cut off the bottom horizontal wire to leave prongs that can be pushed into the ground to help with stability. In windy locations, a T-post will likely need to be driven near the cage. Tying the cage to the T-post can help prevent the cage from toppling in windy conditions. These cages will last for years, but do take up a great deal of storage space when not in use.

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