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For the last month, eastern Nebraska has been experiencing very dry winter conditions, and record high temperatures. This raises the concern for winter desiccation, or winter drying injury, to landscape plants and turfgrass.

Is it time to apply water to your landscape?

Here are a few considerations before getting out your hoses this winter.

How winter desiccation occurs

Although plants are dormant during winter, they continue to lose small amounts of water through their leaves, stems or crowns. Water loss is hastened by high winds, dry air, warm temperatures and reflected heat from buildings.

Desiccation injury results when plants cannot replace water that is lost through leaves, crowns or stems during winter, either due to dry or frozen soil where water is not available for uptake.

In the landscape, this type of injury is usually most prevalent on needled or broadleaf evergreen plants, due to a higher level of water lost through their foliage in winter, compared to deciduous plants. Brown, damaged foliage is often found on one side of the plant, either due to wind exposure or reflected heat from a hard surface.

"However, lawns can also be affected by winter desiccation," says Zac Reicher, UNL Turfgrass Specialist.

"Winter desiccation injury to turfgrass is common when snow cover is not maintained through the winter. Desiccation injury is usually greatest on exposed or elevated areas where water surface runoff is great, and is also prevalent on poorly rooted turf that cannot take-up water deeper in the profile.

"A typical example would be heavy clay soils that were compacted and not prepared properly before seeding/sodding after construction," he said.

Winter watering

Winter watering can be used to minimize the effects of dry conditions. Water only when the soil is not frozen and air temperatures are above 40 degrees F.

Apply water at mid-day so is has time to percolate down into the soil before nighttime's colder temperatures and potential freezing may occur.

Use a slow running sprinkler left in place long enough to deeply water trees and shrubs, moistening the top 12 inches of soil, and moistening the top six inches of soil for turfgrasses.

Do not use "root feeders" or other deep root watering devices. Apply the water slowly enough that it can soak in and does not run off or freeze around the plant stems or crown overnight.

If dry conditions persist, one or two irrigations per month may be needed.

Crown hydration injury

Reicher cautions that if you decide to irrigate, be careful not to cause crown hydration injury to your lawn by watering before a sudden temperature drop is forecast or when the soil is frozen.

Crown hydration occurs naturally in late winter when a day or two of warm daytime temperatures causes snowmelt, which enables plants to start absorbing water. Problems occur in low areas where water collects and stands due to frozen underlying soil or poor soil drainage.

If warm weather is followed by a rapid drop to freezing temperatures, water taken up by the

crown freezes, causing ice crystals which damage or rupture plant cells, and ultimately causing death.

In general, annual bluegrass (Poa annua), a common weed of home lawns and golf courses, is the most susceptible turfgrass to crown hydration injury. Not only is this the most common grass in the low areas, it emerges from dormancy early and begins taking up water.

Other cool-season grasses, such as Kentucky bluegrass and tall fescue, take longer to come out of winter dormancy, which delays water uptake and results in lower susceptibility to crown hydration injury during the late winter.

Preventing turfgrass damage from crown hydration is almost entirely through improving drainage to low areas, and minimizing standing water.