

Views from VanDeWalle

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Drought Update

As the drought that has plagued the western Great Plains for over a year spread across the Midwest, producers are making hard decisions about crop production and cowherd management. According to the [U.S. Drought Monitor](#), as of May 23, 2023, about 71% of Nebraska is in the D2 (Severe Drought), D3 (Extreme Drought), or D4 (Exceptional Drought) categories. The Drought monitor goes from D0 which is abnormally dry, D1 which is moderate drought, D2 which is severe drought, then D3 (extreme drought) and D4 (exceptional drought). According to the [National Integrated Drought Information System](#), on May 23, 2023, Nebraska has 78 counties with USDA Disaster Designations (primary). There are 1.8 million Nebraska residents in areas of drought, and it is the 5th driest April on record since 1895 with only 0.68 in. of total precipitation, down from 1.58" from normal.

With all of the issues the drought is causing, Kelly Feehan, Extension Educator (horticulturist located in Platte Co.) recently released an article on "Trees Stressed by Drought", and I've decided to share some of that information in this week's column. Feehan reported seeing river birch trees whose branches have died from the top down. Up to half of the tree or more may not be leafing out. In most cases, the cause of river birch dieback this year is drought combined with heat and high winds experienced over the last year.

Other types of trees are also impacted. Younger trees with less established root systems, trees planted too deep, those with girdling roots or mower or weed trimmer injury on the trunk, and trees that have not received correct supplemental watering the last two years may have dieback or dead branches.

River birch prefers moist soil, including semi-aquatic conditions along rivers, making them more susceptible to the extreme to exceptional drought we are currently in. It might be assumed lawn irrigation is enough for established trees. In average rainfall years it can be however, we are far behind average precipitation and trees are drought stressed.

Not only deciduous trees, those that lose their leaves in the fall like river birch, are affected but so are broadleaf and conifer evergreens. In the case of evergreens, it is winter desiccation causing needle or leaf browning. Evergreens that went into winter drought stressed then faced a dry winter and windy days to compound the problem. Boxwood, Arborvitae, Japanese Yew, and Spruce are most affected.

We have had very little spring rain following a dry winter and summer. Most trees are likely drought stressed. Not only can this cause dieback and browning, but it

sets trees up to be infected by diseases and insects they would otherwise defend against. Two common examples we are seeing are Cytospora canker in spruce and verticillium wilt in Norway maple, smoke trees and Catalpa. Both are fungal diseases. Healthy trees have good defenses against these fungi and are rarely infected. Stressed trees are readily infected.

Cytospora infects through the trunk and branches. Verticillium infects through roots. Both fungi grow in the water conducting tissue to prevent movement of water from roots to the crown. Infected branches die throughout the tree. If the trunk is infected, trees die from the top down. There is no control for Cytospora or verticillium. Fungicides will not work against them and are a waste of money if applied. While lightly infected trees can survive if infected branches are removed, the tree may continue to dieback. For these diseases, we can only recommend correct watering and mulching and not fertilizing stressed trees with nitrogen.

For all trees, consider using soaker hoses and bark or wood chip mulches to keep the root area of trees cool and moist. When watering, moisten the soil 8 to 10 inches deep for trees. Insert a screwdriver to determine depth. When mulching, place organic mulch on moist soil in a 4 to 6-foot diameter ring. Make sure the mulch is only 2 to 4 inches deep and not piled against the tree trunk.

Because overwatering is just as harmful to trees as underwatering, pay close attention to soil moisture before watering. Established trees may only need a deep watering once a month, depending on soil type. And know that frequent lawn irrigation can lead to overwatering or a lack of soil oxygen which is also important for root growth.

Young or newly planted trees will need more frequent irrigation as their roots are not well established. Be sure to keep the root ball and at least a few feet of soil beyond the planting hole moist, but not saturated, to a depth of 8 to 10 inches. Watering outside of the root ball encourages root growth into surrounding soil.