

To Plant or Not to Plant?

That is the question many are asking this incredibly early and warm spring. At Bismarck, we saw trees with leaves in late March and geese headed north earlier than usual. North Dakota experienced the warmest March on record, and the 7th warmest winter (to date). Historical records reveal late frosts (May 20th or later) in all of the 10 warmest winters. Will it happen again? It is likely.

Cool-season grasses can generally be planted in April with no major problems. Warm-season species should not be planted until May.

The best time to plant trees is after danger of a hard freeze is past. The effect of frost or a hard freeze on newly planted trees depends on the health of the tree and weather and maintenance throughout the growing season. If trees have been delivered and proper storage is not possible, go ahead and plant them now. If dormant, they should adapt to local conditions. If they have broken dormancy, the new growth may be killed by light frost, but healthy trees planted on the proper site should survive the frost and send out a second flush of leaves. A hard freeze (< 20°) on newly planted trees will set them back and weaken the tree. Species that are more susceptible to cold temperatures, trees in poor health, and trees planted on improper sites will likely be killed by a hard freeze. It is generally better to plant dormant trees early with potential for light frost rather than later with a certainty of hot, dry, windy weather.

In summary:

- Early planting advantages are more available moisture, less transpiration and longer period of cooler temperatures.
- Early planting disadvantages are greater frost risk, possible dieback, or death.
- Smaller bareroot trees and shrubs are generally more susceptible to injury than larger or potted material.
- Trees and shrubs planted into a cover of dead thatch or standing stubble will remain dormant longer and experience less frost damage than those planted on bare soil, through fabric, on south aspects, or drier soils.
- Species on the northern edge of their native range are more susceptible to frost injury from early dormancy break.
- Dormant stock will fair better than stock that has broken bud or leafed out.

Brown Conifers

Throughout the upper Great Plains, many spruce, pine, and junipers are showing brown and purplish brown needles. The apparent cause is related to weather. Collectively, the cool, wet spring and early summer; the extremely dry, late summer and fall; and the open, warm winter have caused the currently visible needle discoloration and tree death.

Several years with above normal precipitation and the cool weather of spring 2011 resulted in water closer to the surface. High water at some locations caused root drowning

or carried additional salts that affected the health of the tree. These conditions resulted in dead trees and discolored needles.

The winter weather-caused discoloration may or may not kill the tree. If an otherwise healthy conifer tree has a small portion of purplish brown needles, the tree will likely survive given a normal growing season. Trees with a large portion of discolored and dead needles are more severely stressed and are more likely to die.

The degree of needle discoloration and death is also affected by the genetics of the plant. One plant may show discoloration or death while another is healthy within a planting with fairly uniform conditions.

Ways to reduce stress on trees:

- When the top 6" of soil are dry to touch, irrigate with good quality water sufficient to add 1" of water within the drip line area. Do not overwater. Trees over 5 years old generally only need watering every other week.
- Avoid mechanical damage to trees (tillers, mowers, livestock, etc).
- Control weeds within the area of the tree roots.
- If mulch or weed control fabric is not used, control erosion from tillage or chemical weed control application.

Do not remove the brown evergreen trees until fall. They may grow out of the needle damage. Don't be surprised, however, if a few severely affected trees die and need to be removed.



Brown spruce needles will fall off. Buds at the branch tips, if still alive, will initiate new growth this spring.

Brown pine needles will fall off. This many brown needles may have stressed the tree so much it dies.



The spiral look to the brown foliage on this spruce would indicate a soil related condition such as too much water, increasing salinity or root disturbance in the past few years. The prognosis for this tree is not good.