



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

GardenNotes #116 *The Diagnostic Process*

Worksheet: *Root Spread of Trees*

Using a tree in your landscape, stake out the root system using landscape flags, sticks, screwdrivers or similar marking tools. [20 points possible]

1. Calculate Tree Circumference

In inches, measure the circumference (distance around the tree trunk) at DBH (Diameter Breast Height, or 4 ½ feet).

Tree circumference: _____ inches

2. Calculate Root plate radius

This is the area where damage to the root system could lead to tree failure in wind storms. In this area, avoid routine cultivation and hardscape features that could affect root spread and health. Avoid cutting or other damage to roots in this area.

Root plate radius = 3-6 times DBH. For this exercise, use 6 times DBH

- Multiply the tree circumference (results from above) by 2.
- This number is the estimated radius of the root plate in inches. Mark it with flags in 4 directions (north, south, east, west).

Tree plate radius: _____ inches

3. Tree Protection Zone by Trunk Circumference Method

This is the area where damage to the root system could directly influence tree health and vigor. This is the rooting area to focus on with watering, fertilizer and minimizing soil compaction. The total area estimated here is rather accurate, but the shape of the area may not be round.

Tree Circumference (in inches) / 2 = radius (in feet) of Tree Protection Zone (TPZ)

- a. Divide the circumference of the tree (in inches) by 2.
- b. This is the estimated radius of the TPZ in feet. Mark this with flags in 4 directions (north, south, east, west).

Tree plate radius: _____ feet

4. Total Root Spread (5 times (or more) tree height and/or canopy spread)

This area represents the total spread of the tree's rooting system. Within this area, roots may be concentrated in sections and void in other sections. The actual shape of this area may not be round.

Note: The dripline measurement works for rounded shape tree canopies.

- a. Measure the radius of the drip line (distance from the trunk to the edge of the branches), to the nearest foot.
- b. Multiply the number by 5
- c. This is the estimated radius of total root spread. Mark this with the flags in 4 directions (north south east, and west).

Total spread radius: _____ feet

5. Realistic shape for site

Based on soil conditions, hardscape features and buildings, draw the probable shape of your tree's available rooting space below. How are the factors above influencing the root spread of your tree?