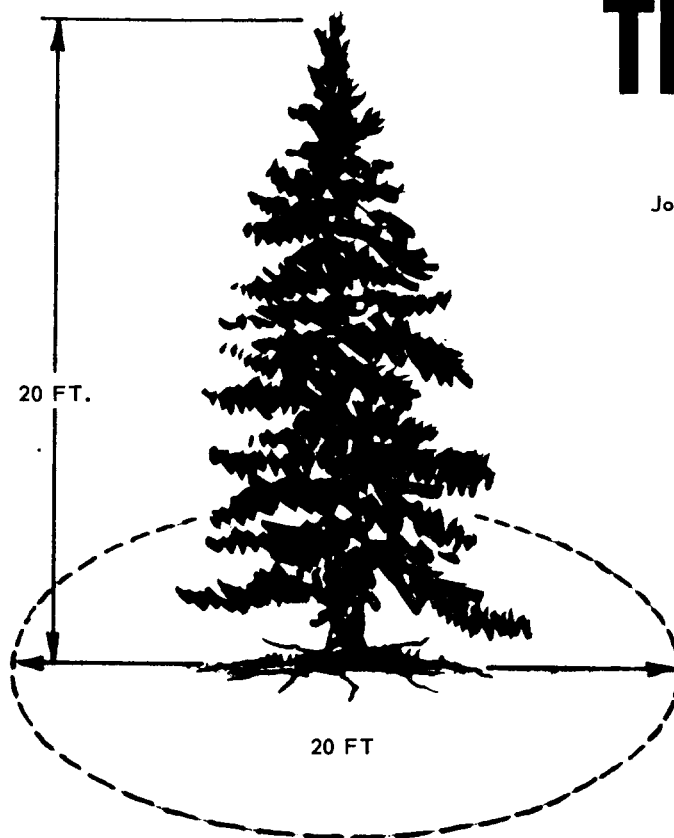




# FERTILIZATION OF TREES

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## FERTILIZATION OF TREES

John J. Zaylskie, Forester

**T**REES OFTEN BENEFIT FROM A FERTILIZER APPLICATION. This is especially true of hardwoods, although evergreens often are helped, too. Shade trees, especially, can benefit from an annual, or at least every 2 years application of fertilizers.

On lawns and boulevards, the leaves are raked up and burned or hauled away. Grass that may also be growing in the same area usually has its clippings removed. These practices tend to reduce fertility by taking nutrients from the soil without replacing any through the decay of leaves or grass clippings.

Shelterbelt trees do not appear to be in as great a need of fertilizer as shade trees.

Use an all-purpose fertilizer on trees. Many commercial fertilizers such as 14-14-7, 14-28-7, 16-16-8 and 16-20-0 can be used. A fertilizer formula such as 16-20-0 means it contains 16 per cent nitrogen, 20 per cent phosphate, and 0 per cent potash.

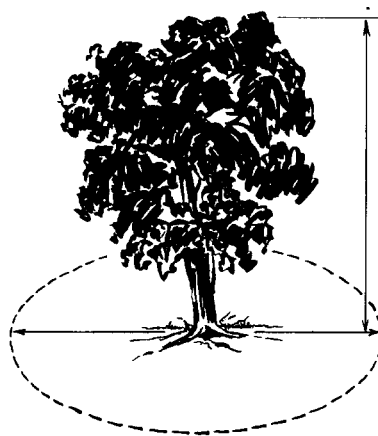
The amount to use is 1 pound of fertilizer to each inch of trunk diameter measured 4-1/2 feet above the ground. If you apply a low analysis fertilizer such as 8-12-6, use 2 pounds per inch of diameter. Do not use too much nitrogen, especially on young trees, since excessive nitrogen may cause spindly growth.

Apply fertilizer for hardwood trees in the fall at the time of leaf

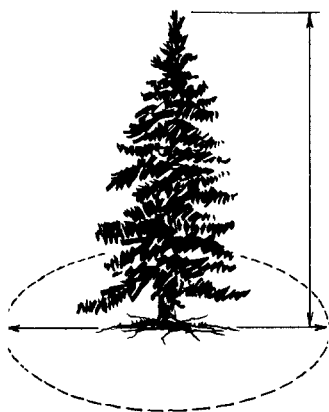
drop, or early in the spring. For conifers, it is best to fertilize in the spring. If spring fertilizing is not possible, then apply the fertilizer late in the fall, just before freeze-up.

There are two methods of applying fertilizer for trees. The preferred method is to put the fertilizer in holes made in the ground beneath the tree branches and to a distance beyond the branches. The other system is to broadcast the fertilizer uniformly on the ground.

Although some of the tree roots extend out at least twice as far as the tree is tall, most of the roots are located closer to the tree trunk. Therefore, with deciduous trees, an area only equal in diameter to twice the height of the tree need be fertilized. With evergreens or conifers, treat an area in diameter equal to its height.



Example — With a 20 foot high hardwood, fertilize a circular area 40 feet in diameter.

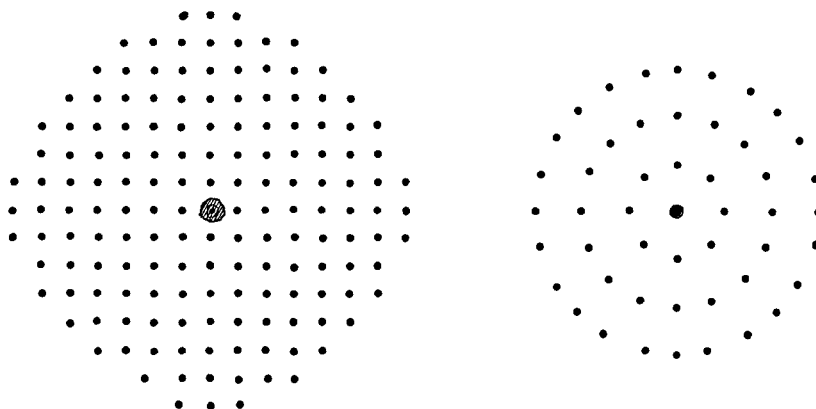


Example – With a 20 foot high evergreen, fertilize a circular area 20 feet in diameter.

## HOLE APPLICATION OF FERTILIZER

If the fertilizer is applied in holes around the tree, space these holes either in a grid system or in concentric circles. These holes should be 1 to 2 inches in diameter, depending on convenience, and 8 to 24 inches deep, depending on soil texture. In heavy soils, where tree roots usually are near the surface, the holes need be only 8 inches deep. In sandy soils, the roots are deeper, and fertilization should be at the 24 inch depth.

No fertilizer is placed near the tree trunk. Stay away from the tree trunk for a distance of three times the trunk diameter.



Holes can be spaced either in a grid pattern similar to a checker board as on the left or in a circular pattern as on the right. Keep holes 3 feet apart.

In each hole place 1/2 cup of fertilizer. If the ground is dry at the time of fertilizing, water the fertilized area heavily. This will dissolve some of the fertilizer, making it possible for the tree to absorb some sooner than it could otherwise.

### **BROADCAST APPLICATION OF FERTILIZER**

Fertilizer can be uniformly broadcast over the ground. The amount to use and the area covered is the same as in the "hole" method.

If the ground fertilized is bare, work the fertilizer into the soil with a rake or some other tool. For areas in grass, water heavily immediately after applying fertilizer, to wash the fertilizer into the soil and to prevent the "burning" of the grass.

### **MINOR ELEMENTS NEEDED BY TREES**

In some areas of North Dakota, trees do poorly because the soil lacks certain minor elements causing trees to fail to develop the normal green leaf color. The leaves may remain yellowish with darker veins. A deficiency of iron is the most frequent cause of this condition.

Ordinary fertilizers in cases of this kind do little, if any, good, although iron chelate by itself or in combination with a fertilizer, have at times, greatly improved the appearance of these chlorotic trees. Chelates should be applied according to the manufacturer's directions.

The information contained in this circular has been reviewed and approved by the Horticulture and Soils Departments of the North Dakota Agricultural Experiment Station.



**Growth Through Agricultural Progress**

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