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Fertilize Your Shade Trees

Throughout the year we receive many letters, and frequently specimens of leaves and twigs from tree-owners throughout the State. Most of these letters state that their shade trees are diseased or that the leaves dry up, that the tree is unthrifty and will not grow. After examining these specimens in the laboratory, we frequently find that the tree has not been attacked by disease but that the trouble is due to poor growing conditions.

Many factors contribute to poor growing conditions. Unfavorable weather is, of course, often to blame. But the vitality of trees is also lowered by attacks of canker-worms, beetles, and many leaf-spotting and leaf-blighting fungi. These agents are not so important where trees are sprayed with insecticides and fungicides, but, unfortunately, too few trees are protected from such pests. Few home owners have equipment to spray any but very small trees.

We must cope with still another factor which is independent of climatic conditions and pests. Shade and street trees in cities and towns rarely have optimum conditions for growth because their root systems are often deprived of water and air by paved streets and walks. Their leaves never function at the maximum degree of efficiency, for they must live in an atmosphere containing soot, smoke, and sometimes noxious gases. We must remember, too, that leaves which drop from shade and ornamental trees in cities and towns are gathered in the fall; they are never left on the ground and allowed to decay and thus provide plant nutrients.

All things considered, there are many good reasons why our trees suffer from lack of plant food. We can supply the food needs with fertilizers that contain nitrogen, phosphorous, and potash. Nitrogen is the most important of the three for shade and street trees, and is mainly responsible for the maintenance of the necessary green color in leaves. Deep green leaves manufacture more food, to be used in the growth of branches, trunks, and roots, than do yellowed leaves.

The bag containing fertilizer has on it the analyses of these three important elements. A fertilizer containing available nitrogen, phosphorous, and potash in the amounts of 12-6-4 or 10-8-6 usually produces the best results. In sections where these mixtures are not readily available, a 7-7-7 or 5-10-5 fertilizer may be substituted. These do not contain as much nitrogen in proportion to the other elements, but their use will certainly help to stimulate trees low in vitality.

Small trees, six inches or less in diameter at breast height, should receive one to two pounds of 12-6-4 or 10-8-6 for each inch of trunk diameter. Large trees, more than six inches in diameter, should receive from two to three pounds for each inch of trunk diameter. For instance, a tree 10 inches in diameter at breast height should receive between 20 and 30 pounds of commercial fertilizer.

Obviously, the area to be fertilized is governed by the location of the tree's feeding roots. Most of these are usually in a circular area just beneath the spread of the outermost branches, extending inward to a smaller circular area about two-thirds of the way towards the trunk.

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Fertilizers are usually applied to large trees or those situated on lawns in a series of holes distributed evenly over the area to be fertilized. An ordinary crowbar may be used for making the holes. Approximately 10 holes should be made for each inch of trunk diameter, and they should be made about 12 inches deep and spaced two feet apart. The proper amount of fertilizer should then be divided evenly among the holes, with enough soil added to fill the holes completely

How often fertilization treatments are needed depends on the kind of tree, its growth responses, and other factors. It may vary from an annual treatment to one made every three or four years.

Nothing has been said about water. However, bear in mind that without water the fertilizers we supply cannot be taken up by the roots. During the spring there is usually sufficient water in the soil for the needs of most trees. But when summer's hot weather and dry spells come, we will have to supply water artificially in order to insure the continued vigorous growth of our trees. This is especially important with recently planted trees. They must have a continuous supply of water until their roots are firmly established and have penetrated into the deeper, more heavily moisture-laden soil. It is much more desirable to soak the ground to a depth of 12 to 18 inches once a week than to water lightly every day or two. In fact, the latter method may do more harm than good.

S. B. Fenne.

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