

UNITED STATES GOLF ASSOCIATION
GREEN SECTION
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LET'S DECLARE A "HOT WAR" ON TREE ROOTS

People of this nation are aware of the "cold war", and the rapid spread of communism, which, if allowed to proceed unhampered by democratic action, could ruin our way of life. In the turfgrass world an equally insidious menace, noted for its creeping paralysis, lies in wait to place a knockout blow on the golfer's enjoyment of his game. The evil has and will continue to do this by destroying the good dense vigorous stands of grass that mean so much to a firm stance and proper shot control. Like cancer, the turfgrass menace far exceeds the late Hitler's ill-famed fifth column by working under-ground in a manner so unobtrusive as to make its visual presence unknown. This quisling of turf to which we refer is TREE ROOTS.

Tree Roots Influence Many Turfgrass Problems

Medical science has shown that colds develop when resistance is low, and that cancerous tissue is the growth of abnormal body cells. One who grows turf also knows that disease, insect and algae damage are greatly increased by a retardation of growth or an abnormal growth of the plant. We know of many instances where heavy tree root infestation was responsible for dollarspot, algae, poor drainage, localized dry spots, runoff, weeds, the wrong grass and even complete loss of a stand of turf.

Plants are lazy. Their root systems seldom seek out new areas of food supply when conditions are favorable close to home. And, let's face it, intensive turf culture favors tree root invasion because both moisture and nutrition are ideal for the trees. In relative comparison by soil scientists and plant physiologists, trees would belong to a group of "strong feeding" plants, whereas turfgrasses would belong in a group of "weak feeding" crops. Thus, the inherent bullying nature of tree roots soon can make our grasses show stress for both food and water even under ideal management conditions.

Active competition for water and plant food robs the grass of needed chemical elements much in the same manner that internal parasites affect both man and animal by retarding growth regardless

of the adequacy of diet. Thus, a cold war approach to ridding our soils under turf of this problem by increasing the amount of fertilizer and applying more water is not a complete answer.

What About The Shade Factor?

Often shade is unduly credited with being responsible for poor turf. Yet, we know of many instances where elimination of tree roots has solved the problems at hand without the necessity of removing valuable specimen trees. Certainly, keeping the tree roots down deep where they belong is the least costly approach to many of our vexing shade problems, and has the further advantage of not displeasing the membership.

When one stops to think about it, the adverse influence of tree roots even makes sense in determining the types of grasses found under shaded conditions. In the west, two major turf species - annual bluegrass and red or chewings fescue - are found (albeit poorly) under shade and tree root competition: red fescues in dry areas because of their drought tolerance and lower fertility requirements; and annual bluegrass in wet areas because its naturally shallow root system makes it well adapted to light frequent irrigations practiced by many clubs.

At this point it would be worthwhile to mention that where tree root invasion is severe it is necessary to irrigate frequently at light rates since the soil will not take water rapidly. This in turn makes the surface wet even though three to four inches down the soil may be powder dry. Further, red fescue grasses should be ruled out for teeing purposes because they will not take the close height-of-cut rightfully demanded by the golfer.

It's Easy To Eliminate Tree Root Competition

Fortunately, tree root competition can be eliminated without harming the trees. In fact, beneficial results may accrue by root pruning, because it forces the trees to forage deeply for food and water. This in turn will anchor the tree more firmly against wind damage, and will make it better able to endure long periods of moisture stress in times of drought. There are three main methods of root pruning that deserve consideration.

1. Ditching & Edging: Trenches dug to a depth of one foot are sufficient to eliminate the surface feeder roots. These are edged with tin, other metal or several thicknesses of a good grade of roofing paper. The longevity of control depends on the edging material, species of tree, and soil and climatic conditions. Good control may last as little as two or longer than ten years.
2. Ditching & Backfilling: A narrow trench is dug, and then backfilled with fresh cinders. The sulfuric acid contained in fresh cinders will keep out new tree roots for about the same period of time as edging under similar conditions.

3. Periodic Tree Root Pruning: The first two methods deserve consideration where tree growth is very sparse. However, on many of our older golf courses veritable forest conditions exist to the extent that all turf areas are saturated with tree roots. Under these conditions the most effective and economical control measure is periodic root pruning (two or three times per year) with a blade especially designed to do the job. Credit for the invention of the Tree Root Pruner blade goes to Jim Haines, Superintendent of Grounds at the Denver Country Club. The blade works from the hydraulic lift of a Ford or Ferguson tractor, and will completely root prune all turf areas on an average size 18-hole course in one day without interfering with surface playing conditions.

What Trees Cause The Most Trouble?

It is difficult to imagine any species of trees that will not send surface feeder roots into our turf areas. Naturally some types are worse in this respect than others, and maples, cottonwoods, willows, poplars and eucalyptus are probably our most notorious competitors for moisture and plant food. However, even the conifers have amazed many folks by their ability to place feeder roots near the surface of a putting green fifty yards or more away.

Regardless of the kind of tree roots that are causing trouble, once they have been removed by pruning or edging it is always surprising to see how rapidly creeping bentgrass, kentucky bluegrass, and even bermudagrass (where well adapted) will grow in partial shade. Of even more importance, our declaration of war will soon give the golfer a turf of championship quality "through the green".

TURFLETTER MAILING LIST

In the past it has been our policy to mail the Western Turf-letter to the two names designated on the application blank for Regional Turf Service. In practice this has not worked well, primarily because of the yearly turnover of club officials. We believe it is important for the Golf Course Superintendent and the current Green Committee Chairman of each club to receive each issue. Therefore, starting with this Turfletter the golf course superintendent will continue to be addressed by name, but the other issue will be sent to the "Green Committee Chairman" in care of the club address. If, as a result of this notice, specific requests are received to address a club official by name, we shall be happy to comply.

A WELL FERTILIZED PLANT IS MORE DROUGHT TOLERANT

In the article "Drought", appearing in the November 1954 publication - Better Crops With Plant Food - Dr. Albrecht, Department of Soils, University of Missouri, reports that it "required 26,000 gallons of water to make a bushel of corn on unfertilized plots, while on fertilized soil only 5,600 gallons of water per bushel were required...This was a clear demonstration that the soil is a factor in drought, not through differences in stored water in this case, but rather as it represents fertility..."

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