

Improperly Applied Weedkillers Can Damage or Kill

Oak and Loblolly PineKnow What You're Working With!

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On May 3, 1968, a farmer's wife near Starkville, Miss., in an effort to control the lateral growth of native grasses along sidewalks to her home, sprayed a commercial weedkiller. The weedkiller (a white powder containing diuron, dimethyl urea, sodium trichloroacetate, bromacil, chlorinated benzoic acid and trichlorobenzoic acid), was applied at about 1 to 1.5 times the rate recommended to kill grasses along highways, around mailboxes, power line poles and the like. The weedkiller did eradicate the woman's grass in a 1.5 ft wide strip. Where no weedkiller was applied, the native grass remained healthy. However by May 14, the weedkiller had also killed most of the already well developed foliage on four of 14

large oaks, 3.5 to 5 feet in diameter (DBH) and 40 to 50 feet tall, and moderately injured six others of like size growing in the yard at various distances (15 to 48 feet) from the point of weedkiller application. The dead leaves stayed on the trees for about 1 1/2 months, and then dropped. The farther an oak was from the point where the weedkiller was applied, the less severe the injury. Four oaks showed no injury. There seemed to be little or no relationship between the type and amount of injury and the species of oak. Rose bushes and other flowering shrubs growing 15 feet from the application point remained unaffected. Pecan trees 30 feet away were not injured.

This incident was reported in the March, 1969 issue (4(3): 84) of *Grounds Maintenance* (Kansas City, Mo.), accompanied by an explanatory diagram (fig. 1), which

is reproduced here. *Quercus stellata* (A), *Q. alba* (B), *Q. falcata* (C), and *Carya illinoensis*, pecan (P), are the trees depicted.

By June 17, 1968, renewed growth had appeared on all injured oak species. However, some of the new leaves were shrivelled or turning brown and looked as though they would die. The landowner asked for my advice expressing concern about whether the most severely affected oaks would recover. I felt that time alone would tell.

By midsummer of 1969, it was obvious that some of the oaks would not live long. Twig after twig sent out exploratory leaves, but soon entire branches were dying, and in the early summer of 1970, seven trees were considered dead, and were cut down, namely A1, A2, A3, A7, A8, A9, and B (fig. 1). The dead oak farthest from where the weed-

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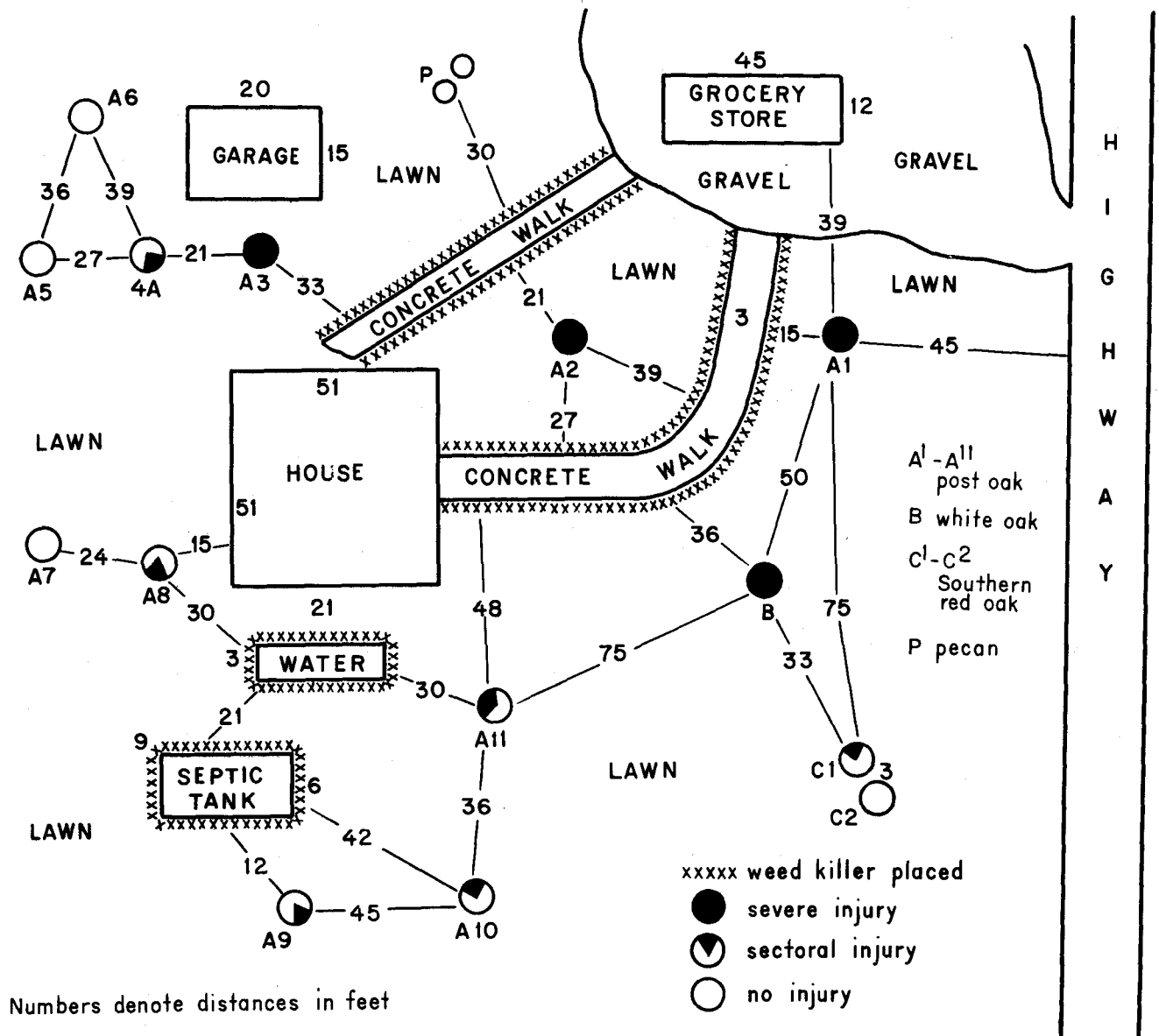


Figure 1.—The spatial arrangement of 14 oak trees in an area where weedkiller injury was pronounced.

killer was applied was 36 feet away. In late August, 1970, loblolly pine the needles), the damage was limited. The pecan trees continued to be saplings, 12 to 15 years old, and 18 to the upper half of the needle unaffected.

A once beautifully shaded and attractive lawn and surroundings of a home and adjacent grocery store stabilization purposes, were seen partly injured ones. *Scirrhia acicola* are no more. Seven large stumps showing extreme needle scorching (the pine brown-spot pathogen) was attest to the damage wrought by a as if hit by fire. In severely injured not present. Subsequently, only weedkiller applied improperly, trees, not a single needle remained alive, but usually (on 40 to 60 percent of affected trees were located 10 to 60 feet away).

15 feet down the slopes from steel ruri-off on the ground next to and guard rails attached to 1 foot diameter around the guard rail posts. There creosoted pine' posts, which were was a -strong odor near them, but it have a residual life of two growing sunken into the ground, and 2 to 2.5 was not typical of this wood seasons at most. The third year after feet above ground. There was a preservative. It was concluded that application, there should have been sharp line of demarcation between the posts probably had been normal growth of newly planted scorched and healthy pine saplings impregnated with creosote before trees. Unfortunately, leaching had where the guard rail stopped. Trees placement in the ground; that a moved the weedkiller 10 to 15 feet less than 10 to 15 feet from guard new coat had recently been sprayed with the gradient. There was no rail posts, but on a higher slope, on; and that damage to the adjacent wind drift of the weedkiller. A showed little or no apparent injury. pines was probably from spray drift. survey of the damaged pines con- The guard rails were positioned at Correspondence with the ducted on March 8, 1971, by Mr. intervals where needed too coincide Mississippi State Highway De- Richard A. Smith, of the Batesville with cattle underpasses or dangerous partment at Batesville requesting MHD district, reveals that viaducts. information on the chemical . . . approximately 20 percent (of the

Preliminary observation showed apparently used to paint the guard scorched trees) are dead. New needles that damage to the loblolly seemed to rail posts, and how it was applied are now appearing on the remaining be confined mostly to the west side brought a reply quite different than pines, and they seem to be on the of 1-55, being especially pronounced expected. True, the guard rail posts road to full recovery." Because near exit 61, and extending 8 to 10 had been creosote treated, under adequate numbers of loblolly saplings miles north and south of it. Later pressure, prior to their installation remain to stablize the slopes, there reports indicated that needle scorching some 8 years ago, when 1-55 was has been no replanting. was present southward from the first opened to the public. The These two instances of toxic Tennessee-Mississippi line for pines, planted soon afterwards, had aftereffects following weedkiller perhaps 25 miles. The east side of been close to the treated posts for application near established hardwood the highway at first seemed to be all this time without any adverse and coniferous trees, emphasize the less damaged than the west because affects. The present damage, reported need for caution. Consider carefully of prevailing winds. Actually this the District Engineer, Mr. Fred H. the extensive lateral distribution of difference existed because the loblolly Marett, was due "... to leaching from a root systems, as well as the soil con- trees on the east side were farther from (commercial) ground sterilant used figuration in relation to leaching, in guard rails than those across 1-55. (in the summer of 1970) around the planning, and in assuring benefits

The pine posts appeared to be guard rail posts to prevent vegetation from these powerful chemicals. freshly painted with creosote. There from growing that would have to be Always know what you're working seemed to be a chemical cut by hand, man power, which is an with. expensive operation."

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