

CAN OUR ELM TREES BE SAVED?

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It seems that the Dutch elm disease has descended on Minnesota and has unleashed its full fury. We knew this would happen and, in fact, had predicted sharp increases in numbers of diseased trees for 1976. It appears, on the basis of preliminary observations, that the losses are going to exceed what we had predicted. The losses predicted for 1975 for five cities in Minnesota are as follows:

Bloomington	3,587	North St. Paul	878
Minneapolis	2,070	St. Paul	10,410
Northfield	31		

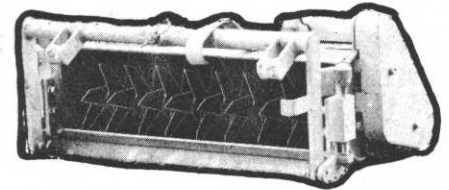
What is even more impressive are the accumulative losses and projected costs of removing and replacing these trees. The losses by 1985 will amount to:

	<u>Elms Killed</u>	<u>Removal & Replacement Costs</u>
Bloomington	392,800	\$ 97,596,750
Minneapolis	130,000	31,692,000
Northfield	7,335	1,822,750
St. Paul	130,489	29,429,250

We wonder if people even realize how extensive and expensive these losses will be.

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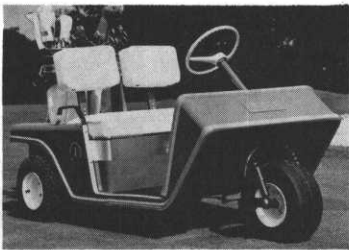
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Unless these trends are altered by improved control programs, 99% of the elms will be lost in St. Paul by 1985. In Bloomington by 1985, 98% of the elms will be lost and in Minneapolis 76% will be gone by 1985. Such losses will considerably alter the appearance of these cities and destroy much of their beauty. Many golf courses have relied on the American elm to a large extent with large elms surrounding club houses, lining fairways and as back drops for greens. It will be a battle to save these trees. If these elms are killed it will take many years to replace them and decades will pass before large shade trees can provide the natural beauty afforded by the elms.

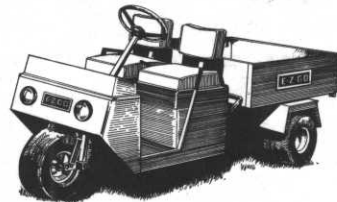
Undoubtedly many people have the impression that one of the new systemic fungicides such as Lignasan BLP will save our elms. It would be most unfortunate to discontinue or even divert any effort from the sanitation program. Actually the effort put into sanitation should be greatly increased. If a community's Dutch elm disease program fails, it will be because of a poor sanitation effort, not because of lack of Lignasan injections. Hopefully people in Minnesota will concentrate their efforts on established control measures and not reach out for a miracle which has not been proven.

Future of the Elms in Minnesota. As matters stand now in this state, it will not be possible to stop Dutch elm disease but it is reasonable to think about slowing the process of the disease; thus allowing time to replace the diseased trees. More important, if the disease can be slowed, it is then easier to keep pace with the tree removal operations. If sanitation programs are intensified, the accumulated losses projected for 1985-1990 could be delayed until 2020. Some elms will survive in spite of what happens but they will never again be the dominant feature they now are in our cities, parks and golf courses.

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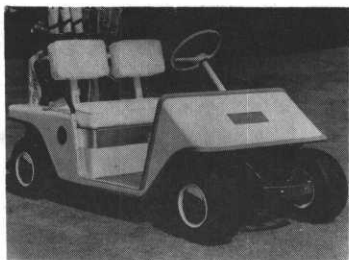


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Control Measures. A good program for saving our elms consists of effective detection of disease and diseased elms, complete elimination of these trees as places for the bark beetles to build their populations and disruption of common root systems between infected and healthy trees. The failure of some control programs can be traced to inefficient detection of diseased trees. It's important to have survey people who are concerned about the trees and will locate a high percentage of the infected trees. Elms damaged by salt or other factors should not be condemned unless sections of the trees have been killed. It is essential to locate trees which are in obscure places and yet easily available to the bark beetles. Wild areas including river vallies, industrial areas and inaccessible places are often sources of tremendous numbers of beetles. We are hopeful that an aerial detection system can be developed but very likely we will always need to rely to a large degree on ground surveys. On golf courses there is no excuse for allowing any diseased tree to escape unnoticed.

The best means of sanitation is to utilize the elm logs either by sawing them into useful products or chipping them. It's unfortunate that disposal systems have been so slow in developing. Every community would have a better control program if disposal systems had been developed more fully. In our opinion there are other techniques which can be used to prevent increases in beetle populations, but there has been little support for such attempts. In wild areas it would be far more sensible to chemically treat trees in such a way that beetles could not colonize them, rather than declare that it costs too much to handle these trees. Both potassium iodide on standing trees and pentachlorophenol on down trees are effective, but unfortunately have not been accepted as recommended procedures. Improvement of sanitation procedures is where a significant part of the research efforts should have been directed.

Even though chemical barriers using vapam are not completely effective, they do work. Often the reason for failure is because of the applicator rather than the chemical. Frequently the fungus has already moved to the next tree. Symptoms are not yet apparent and thus the barrier is placed in the wrong place, behind the fungus. One must be out in front of the fungus to stop it.

Lignasan BLP, which is benomyl solubilized with phosphoric acid, has shown promise in protecting elms from infection. In some instances it has cured trees in early stages of the disease. It will not work when the fungus has become established in the main stem. Trees invaded through common root systems can not be cured with Lignasan. We have observed trees with what we interpreted as symptoms involving less than 5% of the crown, only to find that the fungus was already well established in the main stem. Such trees can not be saved with Lignasan.

Based on our studies to date, we have found that removal of the fungus by pruning is more effective than treating with Lignasan. We also have observed that pruning (leaving large freshly cut surfaces) apparently attracts beetles to these trees; thus resulting in infection. If trees need to be pruned when beetles are active, such pruning wounds should be painted.

Golf Courses are well maintained and it is much easier to control Dutch elm disease in such places. Therefore, it should be possible for golf courses to have reasonably effective control programs...especially if not surrounded by areas where control is not practiced. We have no choice but to increase our efforts to control Dutch elm disease. We should attempt to obtain maximum return for money invested in such programs.