

that. But in our society there's also a high respect for bravery, bravery of the kind that includes fear (as described in the 10th part of the Boy Scout law: "...He has the courage to face danger in spite of fear..."), and here again Arboriculture deserves to share this respect.

Arboriculture is a wonderful and challenging profession, a profession devoted to bringing beauty to all people, all the while facing personal danger

and applying both high scientific knowledge and the special skills of safety under hazardous conditions.

Let us all be proud of Arboriculture....proud that arborists care of their fellow people enough to risk their lives daily to bring to everyone a source of emotional comfort in times when anguish, stress, sorrow and a myriad lesser unpleasantnesses plague us.

## FIFTY USEFUL THINGS TO KNOW ABOUT LEAFSPOT DISEASES OF TREES

by F.W. Holmes

1. A leafspot is an infected area of limited size on a leaf.
2. The size of a leafspot may be limited by defensive reactions of the tree.
3. Or the size may be limited by toxic wasteproducts by the disease organism.
4. Leafspots often are fairly circular, but may have irregular shapes.
5. Leafspot disease infections may be caused by bacteria, fungi, viruses.
6. Most leafspot infections occur in spring as buds open and leaves enlarge.
7. Fungal leafspot infections are spread mostly by airborne spores.
8. Wet weather—also sprinklers!—favor fungal & bacterial leafspot infections.
9. Spacing plants or thinning foliage—quicker drying, makes for less leafspot.
10. Many preventive fungicides can reduce leafspot disease infection rates.
11. When tree-owners notice leafspots it's usually too late to spray that year.
12. Fungicides are usually put on as buds swell & open and as leaves enlarge.
13. Leaf expansion leaves unprotected areas between the particles of fungicide.
14. So sprays often are repeated twice at 7-to-10 (or 10-to-14) day intervals.
15. Spray registrations change so often that the user must check each time!
16. Spray materials must be registered for that (a) host tree and (b) disease.
17. The USER must ask at each purchase: is THIS PACKAGE labeled for this use?
18. Leafspot diseases rarely threaten a large or strong tree's life.
19. We usually don't recommend efforts to control most leafspot infections.
20. Leafspot control is important, however, if the tree is weak or for sale.
21. Leafspot control is important if the property-site appearance is valuable.
22. A leafspot where the fungus itself is visible is "tar spot" of maple.
23. Leafspot fungi can include the rusts, like ash rust or pine needle rust.
24. Leafspot-causing bacteria can be carried by insects or splashed by rain.
25. Leafspot diseases can be confused with "felt" mite patches of "erineum."
26. In erineum, the patches are enlarged leaf cells on the lower side of leaf.

27. Leafspot diseases can be confused with air-pollution or spray injury.
28. In air-pollution injury of pine, spots are the same point on all needles.
29. In spot-type spray injury, spots range from very tiny to very large.
30. Leafspot diseases can be confused with "shock" symptoms by some viruses.
31. Many tiny spots on leaves are caused by sucking insects, like leafhoppers.
32. All 8 of the preceding lines, no fungus or bacterium is present.
33. Pine-needle-scale insects can be confused with pine-needle-rust leafspot.
34. But pine needle scales are flat/streamlined while the rust is humped.
35. Spraying for leafspot diseases is worthless if it rains before sprays dry.
36. No spray now registered can remove or halt established leafspot infections.
37. Some leafspot diseases (like *Entomosporium* on hawthorn) make leaves fall.
38. Other leafspot diseases leave the leaves attached to the tree.
39. Defoliation in late spring or early fall does little harm to the tree.
40. Defoliation in mid-summer (e.g. hawthorn leafspot) weakens trees a lot.
41. Well nourished, properly watered trees endure leafspot infection weakening.
42. The Horse-chestnut "Leaf Blotch" is caused by *Guignardia aesculi*.
43. The Horse-chestnut "Leaf Blotch" fungus rarely crosses lateral leaf veins.
44. So Horse-chestnut "Leaf Blotch" has spots with some straight edges.
45. The Elm "Pepper-and-Salt Leafspot" is caused by an Anthracnose fungus.
46. The Elm "Pepper-and-Salt Leafspot" is caused by *Gnomonia ulmea*.
47. The Maple "Tar Spot" disease is caused by *Rhytisma acerinum*.
48. The Oak "Leaf Blister" disease is caused by *Taphrina coerulescens*.
49. Oak "Leaf Blister" was controlled by every fungicide that was tried.
50. Oak "Leaf Blister" contains NO fluid...the leaf merely bends upward there.

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## Abstract

ROBINSON, DIANE. 1987. **The rise and fall of the beloved elm.** Am. Nurseryman 165(9): 121-122, 124, 126, 128.

The resurrection of the American elm (*Ulmus americana*) has been a dream of many horticulturists since its decline in the 1930s. And with current research and technology, that dream may become a reality. In 1983, the American liberty elm (*Ulmus americana libertas*) was introduced by plant pathologists at the University of Wisconsin, Madison. According to Dr. Eugene Smalley, plant pathologist at the University, these elms are a series of native American elms derived from controlled pollinations made in 1968 and 1970 between selected disease-resistant parents. The University had previously released the elm hybrid Sapporo 'Autumn Gold' and the complex elm hybrid *Ulmus* 'Regal'. These, however, did not have the form of the American elm. The 'Pioneer' elm, a disease-resistant European-Asian hybrid, is a nice tree, but it doesn't have the canopy form of the American elm. It's not as majestic. No one has been able to breed the American elm with European and Asian elms due to genetic restrictions.