

RANKING OF TREES ACCORDING TO DAMAGE OF SEWAGE PIPES

In landscape design, it is important to select tree species whose roots are less likely to enter sewage and drainage pipes. Few quantitative data have been available for California landscape architects and contractors which would help them to recognize the species that notoriously block sewage pipes. Recently two Australian scientists, B.P. Wilkins and R. J. Turner, published results of their five-year study investigating 460 cases of drainage pipe blockage by the roots of more than 60 woody ornamentals planted in Sydney. Such a large sample allowed them to rank the different tree species according to frequency of damage and probability of occurrence. These results are very precious for California landscape architects and contractors because most of the species investigated in Sydney are planted here.

From this table it is apparent that of the 460 cases, figs, eucalypti, willows, liquidambars and jacarandas were most frequently found to cause damage. Members of the family Moraceae most frequently plug pipes, and in some cases (i.e. figs) their roots were capable of blocking a drain 90 feet from the tree stem. Also trees that enjoy swampy conditions in their natural habitat, such as Melaleuca sp. and Salix sp., are notorious for causing damage. Even smaller shrubs such as oleander and camellia showed an unexpectedly high incidence of damage to pipes.

The data also revealed the occurrence of a significantly higher number of pipe blockages during the fall and winter period than throughout the growing season. This might

Table: Ranking of Woody Ornamentals Based on Their Frequency of Sewage and Drainage

Rank	BOTANICAL NAME	PIPE DAMAGE BY ROOTS %
1	Ficus spp.	15.9
2	Eucalyptus spp.	12.2
3	Salix spp.	11.3
4	Liquidambar spp.	6.3
5	Jacaranda spp.	6.1
6	Populus	4.6
7	Nerium oleander	4.3
9	Acer spp.	2.4
10	Cinnamomum camphora	2.2
11	Wisteria spp.	2.0
12	Cupressus spp.	1.7
13	Fraxinus spp.	1.5
13	Morus spp.	1.5
14	Prunus	1.3
15	Callistemon spp.	1.1
15	Grevillea robusta	1.1
16	Camellia spp	0.9
17	Ulmus spp.	0.7
18	Hedera spp	0.4
19	Escallonia spp	0.2
19	Magnolia spp.	0.2
19	Malus spp.	0.2
19	Pittosporum undulatum	0.2
19	Quercus spp	0.2
19	Thuja plicata	0.2
19	Tristania laurina	0.2

suggest that root growth continues in drainage and sewage pipes during the fall and winter, or perhaps because these seasons are associated with frequent rains, the failure of drainage is noticed more often than during the dry summer.

Conclusions and Recommendations

Correct selection of tree species will result in fewer pipe blockages, fewer tree removals, and less labor for root cutting.

Near and above pipes, plant palms, ferns and monocotyledons because they develop roots in a very tight rootball close to the stem.

Although roots have been accused of causing much damage to pipes, in most instances searching roots entered through a crack. Therefore use P.V.C. pipes. P.V.C. pipes and their joints are more flexible; as a result, they are less likely to crack after soil settling. Additionally, their joints are sealed and water leakage is prevented.

Remember, if roots are cut in the pipe, they will respond with rapid re-growth of a thick mat of finer roots (the same as when a stem is topped), resulting in a fast blockage of the pipes. Therefore replacement of the affected section with P.V.C. pipe is more lasting and usually prevents tree removal.

Roots grow more easily in loose or sandy soils where their distribution will be even. However, in situations where a landscape must be done in rock or clay soils, the probability is that roots will grow alongside pipes where soil was disturbed by trenching. Plant trees a few yards away from the trench and use bottlebrush, shrubby grevilleas and junipers.

Never plant figs, eucalypti, willows, liquidambars, jacarandas, poplars, oleanders, maples and camphor trees near sewage or drainage pipes or septic sinks.

Pesticide Use - Due to constantly changing laws and regulations, no liability for the suggested use of chemicals in this Newsletter is assumed by the ONW Newsletter. Pesticides should be applied according to label directions on the pesticide container.

Permission to Reprint material appearing in the ONW Newsletter is granted with the request that you credit the source: Ornamentals Northwest Newsletter, date, volume, issue, page numbers. Do not excerpt or reprint in such a manner as to imply the author's endorsement or criticism of a product or concept.

Nondiscrimination - The information in the Ornamentals Northwest Newsletter is provided with the understanding that no discrimination is intended and that listing of commercial products implies no endorsement by the authors. Criticism of products or equipment is neither intended nor implied.