

STANDARD OPERATING
PROCEDURE

DUTCH ELM DISEASE

0800 WAIPADC (924 723)
waipadc.govt.nz

1. PURPOSE

The purpose of this document is to ensure the wider public can identify Elm trees infected with Dutch Elm Disease (DED) and know the sanitation and control measures required to prevent further spread of DED throughout the Waipā District.

2. CAUSE

DED is caused by a species of fungus and is considered one of the most devastating tree diseases in the world. The disease is spread by Elm bark beetles who carry the fungus from an infected tree and bore into new Elm trees nearby. It can also be spread via trees' connected root systems, movement of firewood or contaminated pruning tools. It does not affect tree species outside of the Elm family (Ulmaceae).

The fungus blocks the Elm's water and nutrient conducting system. An infected Elm tree can die in as little as three weeks or over a period of two to three years.

3. IDENTIFICATION

Elm trees can be identified by their leaves, which are alternate, single, and serrated along the edges, with noticeable asymmetrical bases. The leaves are paper thin and are often rough like sandpaper. The twigs are slender with an alternate branching pattern. The most common in Waipā are Golden Elms, they are noticeable by their bright yellow foliage in summer.



Early symptoms of DED include leaves wilting and/or yellowing on the tip of a branch, then turning brown and curling up. The leaves are usually retained on the branch for some time. These symptomatic leaves in an otherwise healthy crown are called flagging.

As the disease progresses, more flagging will appear until the whole crown becomes symptomatic. This deterioration is often very rapid. After ensuring the tree has been correctly identified as an Elm, check the following:

1. Are there visible signs and/or symptoms of the disease?

- branch flagging
- leaf wilting with yellowing and then brown, curled, dead leaves.
- reddish-brown staining beneath intact bark or visible in the cross section of cut branches/twigs on the outer growth ring,
- beetles' tunnels visible beneath removed bark.

2. If the tree is dead, look for signs such as:

- loose shedding bark
- vertical insect tunnels of the bark beetle on the sapwood,
- small circular bore holes through the bark.

3. DED is a notifiable organism under the Biosecurity Act 1993. If signs and symptoms have been identified report with photos, steps taken and location to info@waipadc.govt.nz and notify Ministry of Primary Industries exotic pest and disease hotline 0800 80 99 66.



Examples of infected Elm trees with DED

4. BIOSECURITY MEASURES

If a tree is suspected to be infected with DED, every effort must be made to limit the spread of the disease. Diseased tree removal must be done as soon as possible to prevent further spread of contaminated bark beetles.

The purpose of sanitation is to remove Elm bark beetle breeding sites and sources of the fungus. High risk activities include pruning or removal of Elms that may involve contact with the infected material.

Sanitation process within the Waipā District:

- When pruning healthy Elm trees, treat all Elm mulch or debris as if infected with DED and do not move more than 500m from site.
- Do not distribute, move, or release DED within the Waipā District.
- Do not move any untreated DED infected plant material within the Waipā District.
- Destroy all Elm plants on site if they are infected with DED
- Mulch, burn, or bury all parts of any infected Elm on site. Do not move diseased Elm material from the infection site. Do not store Elm logs for firewood or other purposes.
- Clean all machinery or other equipment used in connection with infected Elm material with one of the following disinfectants before moving machinery, or equipment off-site:
 - Sterigene - a non-toxic broad-spectrum disinfectant used to sterilise equipment and machinery prior to and post contact. Active against fungi, bacteria, and viruses,
 - 5% bleach,
 - or 80% ethanol or methylated spirits.
- Remove bark from any remaining Elm stumps to below ground level or grind the stumps. Any remaining stump must also be poisoned to prevent regrowth.
- Prune Elm trees while the trees and beetles are in dormancy, during winter months.

5. OTHER INFORMATION

Property owners in Waipa who have Elm trees should be aware of the following:

- The signs and symptoms of the disease – more information can be found at waipadc.govt.nz/dutchelmdisease.
- Transporting any Elm wood as firewood is a serious biosecurity risk.
- We recommend avoiding planting Elms. Nurseries have been banned from propagating them in Auckland, the ban is not in place in the Waikato. However, this may change over time.



Head Office 07 872 0030 • 101 Bank Street, Private Bag 2402, Te Awamutu 3840
Cambridge Office 07 823 3800 • 23 Wilson Street, Cambridge

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