Wetwood in Elms
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Problem

In many parks around Moscow the elm trees are bleeding. Well at least that is

what it looks like. A colorless to light yellow liquid flows from the trees.   Bleeding

can come from injection wounds to insert systemic fungicide, bark cracks or

pruning wounds. When this liquid comes in contact with air it turns a darker

brown, hence the bleeding (1). A positive pressure builds up inside the tree and

the liquid is pushed out from wounds. Symptoms indicate that the trees suffer

from wetwood.

Trees effected with wetwood usually show wilting of the leaves. The

wilting might lead to dieback of branches, especially in younger trees. In older

trees a general dieback of the crown over a number of years can take place (1). When elms are harvested for lumber dark streaks or rings are present in trees effected with wetwood. The number one problem with wetwood is the goop oozing out of pruning cuts or bark cracks. The liquid can smell putrid and look unpleasant. Wetwood does not cause serious harm to an elm tree. Which is good since most elm trees are infected with wetwood.

Cause

Four main bacteria are found as the causal agents in wetwood, *Enterobacter cloacae, Erwinia nimipressuralis, Bacillus metaterium* and *Pseudomonas fluorescence. Enterobacter cloacae* are primarily associated with wetwood (1). In the tree the bacteria are found in the xylem tissue of the tree. They are also found commonly in water and soil. *E. cloacae* has been isolated from the elm bark beetle. Cutting tools like chainsaws and saws transport the wetwood to new pruning cuts from diseased wood previously cut (1).

Remedy

Is a remedy needed? Trees infected with wetwood are found to have just as strong wood and the infected tissue is not decayed or rotted. This tissue is even resistant to wood inhabiting fungi because of the low oxygen levels and high pH (1). Basidiomycetes colonize wetwood trees later then non-infected wetwood trees (1). It seems that wetwood can help the tree fight off fungi and rot. Wetwood is unsightly and can cause die back so there are some remedies to help fend off the wetwood in elms. If injections are to be used to control the

Dutch elm disease then drill the holes shallow, so they don't reach the wetwood core (1). Buy and plant resistant cultivars, elms grafted on root grafts don't show wetwood in their root systems (1). Clean chainsaws well before each cut will help to minimize transporting the bacteria (2). In the past people inserted plastic or metal tubes into the wetwood to release the pressure and help drain off the liquid (1). Now that is known to spread the bacteria inside the tree by breaking the contained area of wetwood and exposing it to healthy tissue in the tree (2).

References

1. Murdoch, C.W., and Campana, R. J. 1981.Bacterial wetwood. Compendium of Elm Diseases. Pp 31-34.

2. Tripepi, R. 2001. Personal conversation. October.