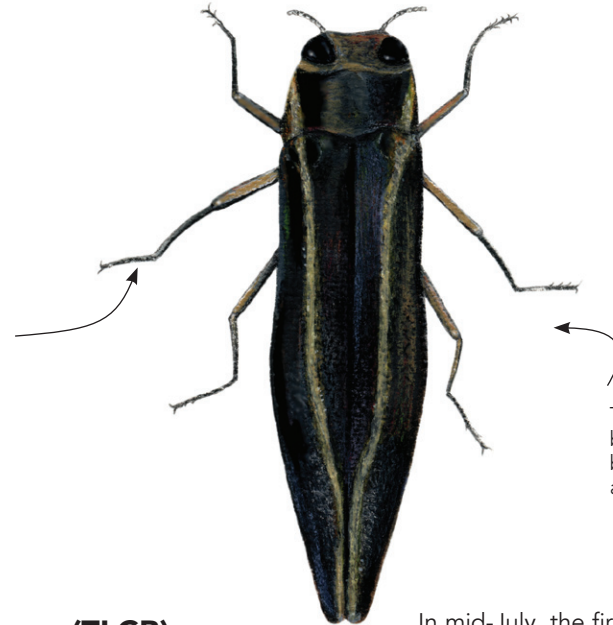




The best protection from the TLCB is prevention. Maintain tree health by watering during drought, mulching, and minimizing damage to the root zone that could cause root injury and stress.

# Two-Lined Chestnut Borer



TLCB is native to North America and occurs in eastern Canada, south to Georgia and Texas, and west to the Rocky Mountains

The TLCB is most recognizable by the two thin lines down its brown wings, although adults are rarely seen.

## Two-Lined Chestnut Borer (TLCB)

Two-lined Chestnut Borer (TLCB) is an opportunistic insect pest that attacks a variety of species. It was given the name "chestnut" borer in recognition of its status as a primary pest of the American chestnut tree. The chestnut has been almost completely wiped out by a fungal disease, yet the insect has retained its name to this day even though there are few chestnut trees for it to attack. A pair of faint white to golden colored lines on the main body and wings of adults are useful identifiers.

## Attacks Oak and Chestnut Trees

The TLCB is primarily a pest of Oak (*Quercus*) and Chestnut (*Castanea*) species. It is considered one of the most serious insect pests on oaks, and the species most frequently attacked are: chestnut oak (*Q. prinus*), white (*Q. alba*), black (*Q. velutina*), red (*Q. rubra*), scarlet (*Q. coccinea*), and burr (*Q. macrocarpa*)

In mid-July, the first visible symptoms of TLCB infestation occur. Infested oaks may be recognized by the sparse, small and discolored foliage, which is followed by the dieback of branches. Leaves of infested branches turn uniformly red-brown. The leaves on non-infested branches remain green. Infested oaks have a distinctive pattern of dead and live leaves on them. In other words, TLCB infested oaks have a "dead, red and green" pattern from the top of the tree down its branches.

## What To Do

Despite the challenges presented by the TLCB you can take steps to protect your tree. Current insecticide technology, Xytect, can protect your tree from TLCB and other insects, including the birch leafminer. With one soil treatment your tree will have year long protection. Success is ultimately determined by both tree condition and treating the tree before it is challenged by TLCB.



feeding galleries and larvae



"D" shaped exit holes



TLCB symptoms in canopy

## Two-Lined Chestnut Borer Symptoms

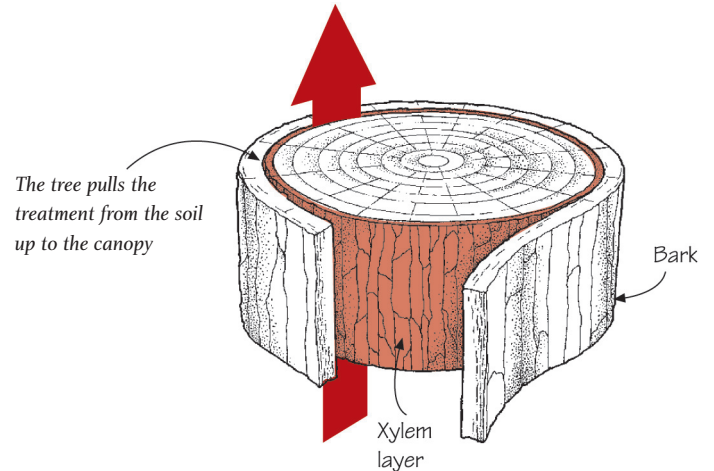
Adult beetles cause relatively little damage, but the larvae feed on the xylem layer and disrupt the movement of water and minerals within the tree. This causes leaf wilting and dieback from the top of the tree downward. The dead, brown leaves usually remain attached to the tree, even after normal leaf drop in the fall.

# Xytect™ Transtect™

## How it works

Xytect and Transtect are systemic insecticides that protect the vascular system of the tree. Xytect should be applied in the spring or the fall and Transtect should be applied in the summertime. Both are applied at the base of the tree and are evenly distributed throughout the canopy by the pull created by the leaves. When the insect ingests the treatment they quickly stop feeding and die.

Transtect will provide rapid protection (within a week on most sized trees) and will last the entire season. Xytect can take up to 6-8 weeks to be active in the canopy but will provide 12 months of protection. Which treatment will be recommended is dependent on the time of year the treatment will be applied.



## TLCB Treatment Considerations

- Preventive treatments are more effective. Treat trees preventively if adjacent trees are displaying symptoms from TLCB attack
- If >33% of the tree is showing symptoms saving the tree is difficult
- If <33% of the tree is showing symptoms treatments may work, but not always
- For infested trees, soil applications of Xytect or Transtect will be effective against the next generation and an improvement in the tree typically occurs the 2nd full season following treatment as the tree repairs previous damage and prevents future damage.

## Added Protection

- Adequate water is a key factor in maintaining healthy trees. A slow, deep watering event once per week during dry conditions will help maintain soil moisture levels and minimize the stress that invites the bronze birch borer.
- Mulch is very beneficial for trees because it reduces competition with turf and moderates soil temperature and moisture levels. The addition of 2-4 inches of wood chips or shredded bark under the drip line can have a very beneficial effect.
- Avoid compacting the soil, changing the soil grade or water drainage pattern, damaging the bark, allowing significant amounts of defoliation by insects or anything else that may stress the tree. Anything that weakens tree health encourages borers.



Soil application of Xytect or Transtect provides annual protect from TLCB



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