

## **Problem:** Borers in Trees



**Plants Affected:** Numerous tree species

**Description:** The term “borers” applies to a wide range of insects whose immature stages generally develop within host plants. Although insects feeding on foliage pose a minimal threat to health and vigor of woody plants, borers feed unseen beneath bark, destroying irreplaceable cambial and wood tissues. Insect orders with the most borer species are Coleoptera (beetles) and Lepidoptera (moths).

Borers are opportunistic and are most likely to attack trees under stress.

**Recommendations:** The best borer control is a healthy, vigorous tree. Such trees have enough sap flow to drown the small borer as it tried to enter the tree. Therefore, it is vitally important to water trees during dry periods in order to maintain good sap flow. Also, mulching under the tree can reduce competition from other plants and provide a more root-friendly environment. However, sometimes insecticides are needed to help protect trees that have already been attacked. Be advised, though, that severely weakened trees may die regardless of what is done. Following are the borer products available to homeowners.

**Imidacloprid:** Products with imidacloprid include BioAdvanced Tree & Shrub Insect Control, Bonide Annual Tree and Shrub Insect Control and Fertilome Tree & Shrub Drench.

These products are labeled for both roundheaded and flatheaded borers. All contain the same active ingredient found in Merit and is systemic in the tree. Historically systemic insecticides have given poor control of borers. It appears that imidacloprid is better on flatheaded borers than roundheaded borers though even the results on flatheaded borers are inconsistent. Flatheaded borers are more likely to be controlled because they feed more in the vascular tissue than the roundheaded borers and are more likely to take up the insecticide. Examples of flatheaded borers include the flatheaded apple tree borer and the bronze birch borer. The lilac/ash borer is a roundheaded borer. This product should be applied several months before protection is needed to allow time for complete distribution.

**Permethrin:** Permethrin is found in numerous products such as Fertilome Kill-A-Bug II. However, these products often only have Peach Twig Borer and Lesser Peachtree Borer on the label. Fortunately, permethrin is also found in Hi-Yield Garden and Farm Insect Control, Hi-Yield 38 Plus and the commercial product Astro. These products have a wide borer label including both roundheaded and flatheaded borers. Permethrin is not systemic and works by killing the adult insect before it lays eggs or killing the young borer larva as it hatches from the egg and tries to bore into the bark. Therefore, the product must be present on the bark before the eggs hatch. It is important to apply the product to runoff so that all the little nooks and crannies in the bark are treated. Only the trunk and lower sections of major branches need be treated.

Keeping the product on the trunk for some of these borers can be a real challenge. For example, trees attacked by the flatheaded apple tree borer would need protection from May through August. The label recommends reapplication every 21 days. Note that none of these products are labeled for borers in fruiting apple trees. Again, the best borer control is a healthy, vigorous tree.

### **References:**

1. [Borers: Common Kansas Species](#), K-State Research and Extension Pub MF-2735
2. [Borers, Management and Prevention](#), K-State Research and Extension Pub MF-2736
3. *Insects That Feed on Trees and Shrubs*, Cornell University Press, pg 232

**Last Update:** 10/18/2023

---

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

*“Knowledge for Life”*

Kansas State University Agricultural Experiment Station and Cooperative Extension Service