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**A LITTLE BIT COUNTRY
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Early Application of Tree Insecticide Suggested

Controlling insects that feed under tree bark with insecticides has been and continues to be a difficult task. However, new systemics are now on the markets that give us some chance of protecting our valuable home landscape ornamentals. Compared to our knowledge of insecticides used to control pests of crops and animals, research on systemics to control tree boring insects is a work in progress.

For us in Northwest North Dakota, the most common tree boring insects are the birch/ash borers and elm bark beetles. Another, the Emerald Ash Borer (EAB), has been receiving a lot of attention because it has killed tens of millions of ash trees in urban, rural and forested settings.

The boring insects feed under the tree bark back in the cambium layer which contains the vascular system responsible for transporting nutrients throughout the tree. The tunnels created by the insects can easily girdle the entire tree thus severing the movement of carbohydrates, water and minerals.

The systemic insecticide available to homeowners is imidacloprid. It can be used as a soil injection or soil drench. Imidacloprid is the most widely tested soil-applied systemic for the control of EAB. All formulations can be applied as drench by mixing the product with water, then pouring the solution directly on the soil around the base of the tree.

Research evaluating the effectiveness of imidacloprid shows varied results. It is most effective when applied as a preventative to healthy trees. Remember this product is taken-up by the roots and requires time to be moved into the above-ground tissue. Thus it should be applied in the fall or early spring. Spring application has been reported giving

the best results. Other research shows similar efficiency with either fall or spring applications. Early spring application, preferably before May 15, is suggested.

Soil applications of imidacloprid should be made when the soil is moist but not saturated. Besides the possibility of runoff, saturated soils will dilute the insecticide concentration and reduce insecticide uptake. In our area, where most of our trees are growing in soils with barely enough water, an application of water following the drench application will likely move the insecticide more quickly to the root system.

Much of the imidacloprid EAB research has been conducted with Bayer Advanced™ Tree and Shrub Insect Control. Several generic products are available to homeowners. The formulations vary and the effectiveness of these products has not yet been evaluated in university tests.

The Ohio State University and Michigan State University are the leading universities testing the effectiveness of insecticides for the control EAB. I feel some of what they are learning can be applied to the control of birch borer for which we have more concern. Their research along with experience indicate that imidacloprid soil drenches are most effective on smaller trees defined as those having a diameter at breast height (DBH) of less than 15 inches. They speculate this may be due to the fact application rates for systemic insecticides are based on amount of product per inch of trunk diameter or circumference. As the DBH of the tree increases, the amount of vascular tissue, the leaf area and biomass that must be protected by the insecticide increases exponentially.

For more research details can be found at a link listed on our website:
www.ag.ndsu.edu/williamscountyextension.