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Modern Methods for Systemic Insecticides

In an era gone by, townspeople welcomed mist blowers trolling neighborhood streets misting trees. Folks today are looking for insect control products and methods that are less environmentally intrusive.

In the past decade or so much research has gone into insecticides directly injected into the tree trunk and those that can be applied to the soil. Trunk products involve drilling into the tree where a delivery device is placed. Soil applied insecticides are diluted materials injected into the soil or drenched on top of the soil surface.

Once introduced into the tree, systemic insecticides travel in a part of the tree called the xylem. Ok, this is scientific. The xylem is where the water is moved from the roots to the twigs and leaves. Correspondingly, there is the phloem which is responsible for taking sugars from the leaves to twigs, branches and roots. Think of it like an escalator in a department store. There are those that go up and those that go down.

Now we know systemic insecticides are in the xylem, so where do insects feed? Insects feed in the phloem? Why? That is where the carbohydrates and sugars are. Insects feed in three general places:

- 1) Leaves – chewing caterpillars, aphids
- 2) On twigs and branches – scales
- 3) Underneath the bark in the wood – beetles and borers

Leaf feeding insects – Systemically applied insecticides work great on aphids and on some chewing insects. Make sure to check the pesticide label to see if the chewing insect in question will be controlled.

On twigs and branches – Scales are harder to control. Scales feed in the phloem. If the scales feed on small twigs and leaves – they will contact the insecticide. Systemic insecticides are often the best material for prolific scale infestations; however these may need to be applied multiple times.

Underneath the bark and in the wood, beetles and borers often are not controlled by systemic insecticides. There are only a few exceptions including “bronze birch borer”, “honeylocust borer” and “flat headed apple tree borer”. The above three borers feed in the inner bark and hence contact the insecticide. Other borers feed much deeper and away from insecticides. Note: there is confusion about ash borers. The ash borer occurring in Colorado is the lilac ash borer and this insect is **not** controlled by systemic insecticides.

Always read the pesticide label attached to the container. The best way to protect your trees is to contact a licensed tree care company and have them inspect and treat your trees.

For more insect control information, the Colorado State Forest and Colorado State University Extension Services both have insect control information on their web sites at <http://www.csfs.colostate.edu> and <http://www.ext.colostate.edu>.

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