



## **Boxwood Leafminer and Its Control**

April 22, 2013

The boxwood leafminer continues to be the primary pest we deal with in boxwood. Over the period of several years, a lightly infested plant can become discolored, brown, and even defoliated. We have seen severe leafminer populations kill boxwood. The good news about the boxwood leafminer is there are effective control options. Additionally, control options are simplified because there is only one generation of the pest produced per year.

The life cycle of the boxwood leafminer begins in the spring. Leaves containing larvae blister as young larvae grow and feed just under the epidermal cells of the leaf.



**Leaf Blisters in Early Spring**

The larvae soon turn into pupae, and around late April or early May, the pupae emerge from the leaf as adults. To the naked eye, the adult leafminer appears to be an orange mosquito. The adults are weak flyers and generally hover within inches of the boxwood after hatching because any wind will blow them away. The leafminers pupate over a 3 week period, depending upon the temperatures during that time. The adults mate and then the female lays eggs in the tender new growth of the boxwood. The eggs hatch sometime in early summer, around June 20 in central Virginia, and the larvae begin the cycle of growth that will conclude the following spring.



**Larvae feeding under the leaf surface**

Saunders Brothers, Inc., has done extensive work trying to determine what chemical controls are best for boxwood leafminer, and the most effective timing of those chemical applications. We have found it difficult to time a spray to kill the leafminer adults. As discussed above, the life cycle is short, perhaps only a few days in some cases. Since you would have to spray every 2 or 3 days over a 2 week period, we think this control strategy is futile.

The best control method would be to use a systemic insecticide after the eggs hatch, around mid-June in central Virginia. Since the larvae are alive, eating, and growing all during the summer and fall, we have found these systemic insecticides to be effective until the fall temperatures turn really cold, which in some years is not until Thanksgiving. When these chemicals are applied properly and thoroughly to all boxwood in a given area, you can receive control for up to 2-3 years, because you kill nearly the entire population and it takes several years to bring that population back up to noticeable levels. Indeed, the easy part of control is that timing is not as important as a strategy to kill the adults.

The best products that we have tried are those that contain the active ingredient *imidacloprid*, *thiomethoxam*, or *dinotefuran*. Saunders Brothers, Inc., can relate only our experiences; we recommend any nurseryman or homeowner contact his local full service garden center or Extension personnel for recommendations.

Boxwood leafminer is a controllable pest when proper attention is taken. Another strategy that Saunders Brothers, Inc., is exploring is finding varieties that are resistant to the boxwood leafminer. We have experimented with about 85 varieties over the years and have found moderate to good resistance in these cultivars: *Insularis Nana*, *Vardar Valley*, *Suffruticosa*, *Grace Hendricks Phillips*, *Morris Dwarf*, *Green Pillow*, *Golden Dream*, *Jim Stauffer*, *Wintergreen*, *Jensen*, *Winter Gem*, *Morris Midget*, *Rotundifolia*, *Elegantissima*, *Fastigiata*, and *Dee Runk*. The astute gardener should consider one of these varieties if neighboring landscapes have high populations of leafminer or if he desires to minimize control measures.

For more information on boxwood leafminer, please contact Saunders Brothers, Inc.