

Start Clean, Stay Clean

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Figure 1: Brown marmorated stink bug hitchhiker on a living wreath.

We are in the swing of the holiday season and Christmas decorations, ranging from trees to living wreaths, are for sale at stores. Thinking ahead, you might already have in mind how to dispose of plant material after the holidays, but it is important to take into consideration an important pillar of plant disease management when you decide on a location: Exclusion.

When dealing with living plant material, whether seeds, bulbs, or nursery stock, these plants could be carrying pathogens or pests from where they were originally grown (Figure 1). Movement of these materials can be a pathway for the introduction of diseases to new areas. This is not only restricted to intact or whole plants. Cut stems, flowers, mulch, wreaths and Christmas trees can also help move these organisms around.

In 2017 our lab received a wreath from an Indiana Department of Natural Resources (IDNR) Inspector that included cut stems from fir, juniper, and boxwood (Figure 2). The boxwood foliage showed symptoms of boxwood blight and we confirmed the pathogen, *Calonectria pseudonaviculata*, by microscopic examination (Figure 3 and 4). Depending on how an infected wreath was handled and

disposed after the holidays, the boxwood blight pathogen could enter a customer's landscape without them knowing. *Calonectria* can survive in plant debris in the soil for years, so there is potential for infection and spread to boxwood in the landscape. Fortunately, the IDNR acted quickly in the 2017 case and, through outreach, infected wreaths that had been sold in the state were returned by customers and destroyed to prevent spread.



Figure 2: The sample collected by the IDNR Inspector to examine for boxwood blight.



Figure 3: Boxwood leaves within the wreath that show symptoms of leaf blighting.



Figure 4: Black lesions on green boxwood stems which are characteristic of boxwood blight.

Exclusion as a management strategy is the first line of defense in preventing the introduction of new pests and pathogens. Starting with clean seed or nursery stock is usually the first step in attempting to stay clean and free from diseases. Phytosanitary certification and inspection of nursery stock by regulatory agencies can help prevent the movement of infected/infested plants, but when you are purchasing plants don't hesitate to do your own inspection, so you can avoid sickly plants. Quarantining plants that were just purchased can allow time for plants to develop symptoms if they are not known to be pest free.

The spread of new pests and diseases to locations that they can thrive is regarded as inevitable, but by utilizing exclusion-type management, we can delay their entrance and prevent a disease problem from developing. Trees and wreaths can be taken to recycling centers, but we do not recommend composting the plant material on site, especially if there are visible symptoms of disease.

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