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FS# CH0115

Considerations for Fungal Disease Management

While it is understood that a fungal presence on plants is usually considered harmful, it is important to note that not all fungi cause diseases. In fact, most fungi that exist in the environment are beneficial, if not crucial to our existence, acting as decomposers of organic matter such as dead trees and fallen leaves.

According to University of Florida research, the three main types of plant pathogens are fungi, bacteria, and viruses. Of these three types of plant pathogens, fungi cause more turf and ornamental disease than any other, at about 85 percent of diseases. Fungi generally break down plant material for nutrients. When attempting to identify fungi, some vegetative and reproductive parts of fungi can be seen by the naked eye or microscope to help with identification. Vegetative parts that can be observed



Figure 1. Powdery Mildew on Crape Myrtle. Credit UF/IFAS Extension Santa Rosa County

on some common fungi are large amounts of hyphae, called mycelium, that allow the fungi to spread and grow. The reproductive parts that can be observed are typically fungal spores. For example, if you have ever noticed powdery mildew disease on crape myrtle leaves (Figure 1.); the structures that comprise the ‘powder’ are actually large amounts of mycelia and spores.

Using proper cultural practices is the best way to prevent and manage disease outbreaks. Many pathogens are found naturally in the soil, so avoid overhead irrigation that causes water to splash up from the soil onto ornamentals or vegetable crops. Using micro-irrigation as an alternative to

overhead watering will help with this. Irrigate in the early morning hours. Irrigating late at night, combined with dew in the morning hours, extends the wet period on foliage, creating a good environment for disease development. Apply fertilizer at recommended rates. Over fertilizing can increase insect and disease populations by providing an over-abundance of tender, leafy plant material for fungi to feed on.

If a problem does occur, identifying a disease from a disorder (such as a nutritional deficiency) is an important and sometimes difficult step to take before deciding what control measure is needed. When using fungicides, note that they are only effective on fungal diseases, not on bacteria, viruses, or other disorders. Contact your local Extension office for fungicide recommendations or for other questions. Research on this and other turf disease topics can also be found at http://edis.ifas.ufl.edu/topic_turf_diseases.