

## Stereo Microscope Use

This microscope has a magnification range of 7-45x. The stereo microscope is used for initial examination of a disease sample. Start at the lowest magnification and gradually increase magnification to closely examine macroscopic details of the sample. Sometimes the fungus can be identified using the stereoscope. More often a wet mount of the sample needs to be made and viewed using the compound microscope.

When viewing diseased tissue with the stereo microscope, focus on the affected plant part, usually this is a leaf spot. Fungi produce certain structures within the affected necrotic portion of the leaf that aid in identifying it. Using the stereo microscope you should be able to narrow the fungal identification based on the fungal fruiting structures produced within the leaf spot. Fungi in the Deuteromycete (Imperfect) class, which consists of the majority of plant pathogens, produce their spores on naked conidiophores or within acervuli or pycnidia (see photos). Acervuli and pycnidia contain the conidiophores and spores of the fungus. Conidiophores are the structures that produce the fungal spores.

Fungi are identified based upon 1) which structure the spores are housed, its color, shape, and ornamentation, 2) conidiophore pigmentation, size and branching, and 3) spore size, shape, pigmentation and ornamentation.

While focusing on the fruiting structures, cut out a small section of the affected spot containing the structures for viewing with the compound microscope. If too large of a section of tissue is used to make a wet mount you will not be able to view the sample clearly.

