MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #332

Homework ANSWERS: Plant Pathology

Answer the following questions.

1. What four components must be present for biotic disease to develop?
   - **Susceptible plant.**
   - **Pathogen (organism that causes the disease).**
   - **Favorable environment for disease development.**
   - **Time.**

2. Another name for a living cause of disease is: **biotic.**

3. Another name for a non-living cause of disease is: **abiotic.**

4. List three ways to manage powdery mildew on a shrub.
   Possible answers include:
   - **Thin/prune properly for good air circulation.**
   - **Plant susceptible plants where there is good air movement.**
   - **Collect leaves in the fall and dispose.**
   - **Use appropriate fungicides at the appropriate time.**

5. A client brings you a foot-long branch of an aspen tree. The leaves on the branch tips are dark brown and wilted; the branch tip is bent over. Could this be fire blight? Why or why not?
   This cannot be fire blight because aspen trees are not susceptible to that disease.

6. List two general management strategies for *Cytospora* canker disease on an aspen.
   (NB "Grow resistant varieties" are not a viable strategy, as all aspen are susceptible.)
   - **Remove cankers and cankered stems/trunks.**
   - **Grow healthy trees and manage tree stress.**

7. How are leaf scorch and winter desiccation similar in terms of how they develop? In symptom expression?
   Both are caused by lack of available water in the leaves. Both appear as marginal necrosis; for deciduous plants leaves turn brown from the outside inward and on conifers needles turn brown from the tip inward.

8. A ten-foot row of low-growing junipers is planted between the west facing side of an apartment building and a sidewalk. By mid-winter, the sidewalk side of the junipers begins to turn completely brown. What symptom supports an abiotic diagnosis? State a possible cause of the juniper symptoms. **The biggest clue is that the entire sidewalk side of the junipers is brown (uniform appearance points to abiotic problem). The most likely cause of damage is salt injury from de-icer used on the sidewalk.**