Chapter 40 – Plant Defense Responses

1. Why are non-native invasive species such a threat?

2. What is the 1st line of defense for all plants? Explain.

3. How does a plant respond to attack by a parasitic nematode?

4. Why might bacteria on leaf surfaces increase the risk of frost damage?

5. How might a fungus sneak into a plant?

6. How do some bacteria and fungi benefit plants? Provide an example.

7. What are **secondary metabolites**? How do they help plants? Provide some examples.

8. Why aren't plants hurt by the toxins they produce?

9. What is **allelopathy**?

10. **Ricin**, a toxin found in castor beans, is six times more lethal than cyanide when ingested. How does it strike?

11. What are **phytoestrogens**? Why is their use controversial?

12. What is **taxol**?

13. Which secondary metabolite has been effective in the treatment of malaria? _____

14. Describe the following examples of mutualism between animals and plants:

    a. **Acacia trees and ants** _____

    b. **Parasitoid wasps, caterpillars, and leaves** _____

15. Briefly describe the mechanism of a **wound response**.

16. What is an **avirulent pathogen**?

17. Discuss the **gene-for-gene hypothesis**. What is the role of the **hypersensitive response (HR)**?

18. What are **phytoalexins**?

19. Plants are also capable of eliciting a **systemic acquired resistance (SAR)**. What does that mean?