ADVANCED BIOLOGY: PLANT RESPONSES TO INTERNAL AND EXTERNAL SIGNALS

(USE CHAPTER 39 AS A RESOURCE)

PLANT HORMONES HELP COORDINATE GROWTH, DEVELOPMENT, AND RESPONSES TO STIMULI

Hormone

1. The Discovery of Plant Hormones: Look over the experiments
2. Tropism
3. Phototropism
4. A Survey of Plant Hormones
5. Auxin (IAA)
6. The Role of Auxin in Cell Elongation
7. Auxin’s Role in Plant Development
8. Practical Uses for Auxins
9. Cytokinins
10. Control of Cell Division and Differentiation
11. Anti-Aging Effects
12. Gibberellins
13. Stem Elongation
14. Fruit Growth
15. Brassinosteroids
16. Abscisic Acid
17. Seed Dormancy
18. Drought Tolerance
19. Ethylene
20. The Triple Response to Mechanical Stress
21. Senescence
22. Leaf Abscission
23. Fruit Ripening

RESPONSES TO LIGHT ARE CRITICAL FOR PLANC SUCCESS

1. Photomorphogenesis
2. Etiolation
3. De-etiolation
4. Action spectrum
5. Blue-Light Photoreceptors
6. Phytochrome Photoreceptors
7. Phytochromes and Seed Germination
8. Phytochromes and Shade Avoidance
9. Biological Clocks and Circadian Rhythms
10. Circadian Rhythms
11. The Effect of Light on the Biological Clock
12. Photoperiodism and Responses to Seasons
13. Photoperiodism and Control of Flowering
14. Short-day Plants
15. Long-day Plants
16. Day-neutral Plants
17. Critical Night Length
18. A Flowering Hormone?

PLANTS RESPOND TO A WIDE VARIETY OF STIMULI OTHER THAN LIGHT

1. Gravity
2. Gravitropism
3. Statoliths
4. Mechanical Stimuli
5. Environmental Stresses

Abiotic

Biotic

1. Drought
2. Flooding
3. Heat Stress
4. Cold Stress

PLANTS RESPOND TO ATTACKS BY HERBIVORES AND PATHOGENS

1. Defenses Against Herbivores
2. Defenses Against Pathogens
3. Host-Pathogen Coevolution
4. Virulent
5. Avirulent
6. “Compromise”
7. Gene-for gene recognition
8. The Hypersensitive response
9. Systemic Acquired resistance