# What Are Plant Hormones?

Worksheet

Plant hormones are naturally occurring organic compounds that regulate plant growth, development, and responses to stimuli such as light, gravity, and stress, even at very low concentrations.

## Questions

1. Which plant hormone is mainly responsible for phototropism?

A) Ethylene
B) Auxin
C) Abscisic acid
D) Cytokinin

2. Which hormone is a gas and triggers fruit ripening?

A) Gibberellin
B) Cytokinin
C) Ethylene
D) Auxin

3. Which hormone helps plants survive drought by closing stomata?

A) Abscisic acid (ABA)
B) Gibberellin
C) Auxin
D) Ethylene

4. Which hormone class is most associated with promoting cell division?

A) Auxins
B) Cytokinins
C) Ethylene
D) Abscisic acid

5. A potted plant on a windowsill bends toward the light. Which hormone is responsible and how does it work?

6. A farmer sprays gibberellin on grapevines. What effect would you expect and why?

7. Ripe bananas are placed next to unripe green bananas in a closed bag. The green ones ripen faster. Explain using a plant hormone.

8. Define: What are plant hormones?

9. Define: Name the 5 major plant hormones.

10. Define: Which hormone causes phototropism (bending toward light)?

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# Answer Key

1. B) Auxin - Auxin accumulates on the shaded side of the stem, causing faster cell elongation there and bending the stem toward light.

2. C) Ethylene - Ethylene is a gaseous hormone that triggers ripening enzymes and spreads between fruits, ripening neighbors faster.

3. A) Abscisic acid (ABA) - ABA is the plant's main stress hormone, promoting stomatal closure and seed/bud dormancy.

4. B) Cytokinins - Cytokinins stimulate cell division (cytokinesis) and delay leaf senescence.

5. Light hits the stem unevenly, stronger on the side facing the window Auxin migrates to the shaded side of the stem Higher auxin concentration causes cells on the shaded side to elongate faster Uneven elongation bends the stem toward the light (positive phototropism)

6. Gibberellins promote cell elongation and fruit growth Applied to grapevines, they increase internode length and grape (berry) size They are also used commercially to produce seedless, larger grapes Result: bigger grape clusters with elongated stems

7. Ripe bananas release ethylene gas as they ripen In a closed bag, ethylene accumulates around the fruit Ethylene triggers ripening enzymes in the unripe bananas (autocatalytic effect) Result: nearby green bananas ripen faster than if left alone

8. Chemical messengers made in small amounts by plant tissues that regulate growth, development, and responses to the environment.

9. Auxins, gibberellins, cytokinins, abscisic acid (ABA), and ethylene.

10. Auxin - it accumulates on the shaded side and speeds up cell elongation there.

**Bounlu**

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