Plant Hormones Encyclopedia Article

Plant Hormones

The following sections of this BookRags Literature Study Guide is offprint from Gale's For Students Series: Presenting Analysis, Context, and Criticism on Commonly Studied Works: Introduction, Author Biography, Plot Summary, Characters, Themes, Style, Historical Context, Critical Overview, Criticism and Critical Essays, Media Adaptations, Topics for Further Study, Compare & Contrast, What Do I Read Next?, For Further Study, and Sources.

(c)1998-2002; (c)2002 by Gale. Gale is an imprint of The Gale Group, Inc., a division of Thomson Learning, Inc. Gale and Design and Thomson Learning are trademarks used herein under license.

The following sections, if they exist, are offprint from Beacham's Encyclopedia of Popular Fiction: "Social Concerns", "Thematic Overview", "Techniques", "Literary Precedents", "Key Questions", "Related Titles", "Adaptations", "Related Web Sites". (c)1994-2005, by Walton Beacham.

The following sections, if they exist, are offprint from Beacham's Guide to Literature for Young Adults: "About the Author", "Overview", "Setting", "Literary Qualities", "Social Sensitivity", "Topics for Discussion", "Ideas for Reports and Papers". (c)1994-2005, by Walton Beacham.

All other sections in this Literature Study Guide are owned and copyrighted by BookRags, Inc.

Contents

Plant Hormones Encyclopedia Article.....1

Contents.....2

Plant Hormones.....3

Plant Hormones

Plant hormones are important naturally occurring chemicals that influence plant growth. They are often called plant growth regulators to distinguish them from animal hormones that were discovered first and differ somewhat in their mode of action. Like their animal counterparts, plant hormones are effective in very small amounts, and tend to be synthesized at one site and transported elsewhere before they become functional. The first plant hormone was isolated by the Dutch plant physiologist Frits Went in 1926. Because of its ability to stimulate growth, he named it auxin from a Greek word meaning "to increase." Sensitive bioassays enabled researchers to garner enough of the substance to chemically identify it as indoleacetic acid (IAA). IAA has been shown to play a role in a number of important features of plant growth including apical dominance, phototropism, gravitropism, and differentiation of vascular tissue. Several synthetic auxins have become important commercial products. The best known, dichlorophenoxyacetic acid (2,4-D), is widely used as a herbicide. Horticulturists use another, Naphthalenacetic acid (NAA), to induce the formation of roots on plant cuttings. An important group of plant hormones, called cytokinins, stimulate cell division and delay senescence in aging tissues. They are chemically related to the purine, adenine, found in nucleic acids. The gibberellins are a chemically complex family of plant hormones that influence shoot elongation as well as other aspects of growth. Perhaps the most unusual plant hormone is the gas ethylene, which stimulates fruit ripening. The hormone abscisic acid induces dormancy in perennial plants, and causes seeds to remain dormant. A hypothetical hormone called florigen has been proposed as a factor promoting flowering. It has never been isolated, however, and may not exist. The flowering response may instead result from the interaction of several of the known hormones.