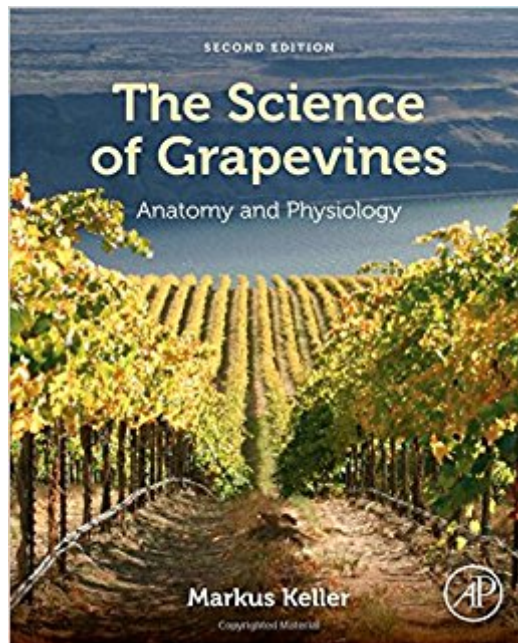


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# The Science Of Grapevines, Second Edition: Anatomy And Physiology



## Synopsis

The Science of Grapevines: Anatomy and Physiology is an introduction to the physical structure of the grapevine, its various organs, their functions and their interactions with the environment. Beginning with a brief overview of the botanical classification (including an introduction to the concepts of species, cultivars, clones, and rootstocks), plant morphology and anatomy, and growth cycles of grapevines, The Science of Grapevines covers the basic concepts in growth and development, water relations, photosynthesis and respiration, mineral uptake and utilization, and carbon partitioning. These concepts are put to use to understand plant-environment interactions including canopy dynamics, yield formation, and fruit composition, and concludes with an introduction to stress physiology, including water stress (drought and flooding), nutrient deficiency and excess, extreme temperatures (heat and cold), and the impact and response to other organisms. Based on the author's years of teaching grapevine anatomy as well as his research experience with grapevines and practical experience growing grapes, this book provides an important guide to understanding the entire plant. Chapter 7 broken into two chapters, now "Environmental Constraints and Stress Physiology" and Chapter 8 "Living with Other Organisms" to better reflect specific concepts. Integration of new research results including: Latest research on implementing drip irrigation to maximize sugar accumulation within grapes. Effect of drought stress on grapevine's hydraulic system and options for optimum plant maintenance in drought conditions. The recently discovered plant hormone strigolactones and their contribution of apical dominance that has suddenly outdated dogma on apical dominance control. Chapter summaries added. Key literature references missed in the first edition as well as references to research completed since the 1e publication will be added.

## Book Information

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## Customer Reviews

Dr. Keller received his master's degree in agronomy (plant science) and doctorate in natural sciences from the Swiss Federal Institute of Technology in Zurich. He has taught and conducted research in viticulture and grapevine physiology in three continents and is the author of numerous scientific and technical papers and industry articles in addition to being a frequent speaker at scientific conferences and industry meetings and workshops. He also has extensive practical experience in both the vineyard and winery as a result of work in the family enterprise and was awarded the Swiss AgroPrize for innovative contributions to Switzerland's agricultural industry.

Great book, VERY dense. The only thing that really bothers me is how he cites his text within the writing instead of having them at the end of the book. Very useful for understanding the phenology of grapevines and the grapes.

Excellent book

Excellent book that covers much more than physiology and anatomy of grapevine, as well as summarizing the current literature.

Very informative. I work in the winegrape growing business and learned some things.

For the student, this text meets and exceeds all expectations for my Vine Physiology class.

I am aware of two great books on the science of grapes and grapevines. This is one of them. Both books present a masterful collection of science, from the point of view of biology, botany, and agricultural production. The author here deserves a hearty Congratulations. I was especially happy - and impressed - that the author started from fundamental ideas in biology. He explains these very clearly, and then goes on to show how they play out ... for grapevines. I am sure i will use this book for years and years as a reference. The other great book on grapevines is written in Spanish and was published in Chile - I apologize but i do not have the title handy. These two books are a

tremendous contribution to the science of grapes and wines.UPDATE ... i thought i would quickly update this review, after reading the book with much detail. It is important for readers to know that this text is a very scientific description of grapevines. It has the "look and feel" of a professional botanist who describes the exact growth habits of grapevines and grape cultivars. This book will appeal to people who want a review of the scientific literature. But this book could be very frustrating for people who want to grow grapevines, and need practical tips. For example, how do high temperatures affect the quality of your grapes? After you read various entries in the book, you still dont have a simple clear answer. This book does not distill the scientific knowledge into a clear, simple format of ideas. It discusses the pro's and con's from a scientific viewpoint. You still need the knowledge of real grapevine growers, if your goal is to start a vineyard.

the cover is broken!!

This book is exactly as the title states. It isn't light reading, but most science books aren't, either. It's a well organized, and thorough overview of the anatomy and physiology of grapevines.

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