



The Fundamentals of Horticulture

Theory and Practice

Essential reading for all studying horticulture and keen gardeners. This clear introduction to the principles underlying the practical applications of horticulture opens up the excitement of growing plants and garden development without readers wading through complex information. Written by a team of highly motivated and experienced horticultural tutors, the text supports the newly restructured RHS Level 2 qualifications with related Level 3 topics in boxes and signposting to Level 4 topics, together with other horticultural qualifications at these levels.

Full colour images tied closely to the text and practical case study boxes inspire readers by making topics relevant to their own horticultural experiences. A comprehensive glossary helps build confidence in the use of classical horticulture language as well as new developing terms, and end-of-chapter questions encourage readers to apply what they have learned. Extensive online supporting material includes mind maps showing the relationship of topics and aiding students in revision, and can be found at www.cambridge.org/horticulture.

Chris Bird has over 25 years of horticultural teaching experience in guiding learners through the complete suite of Royal Horticultural Society (RHS) qualifications, together with other horticultural qualifications including the BTEC National Diploma and City & Guilds Subsidiary, Diploma and Extended Diploma. He has co-ordinated Sparsholt College's Chelsea Flower Show educational gardens for the past 14 years, winning 14 RHS show medals including five at gold level, and has written articles for a number of gardening magazines.



Sharing the best in Gardening

The RHS is the UK's leading gardening charity, dedicated to advancing horticulture and promoting good gardening. Its work includes training the next generation of gardeners and creating hands-on opportunities for children to grow their own plants. For more information visit www.rhs.org.uk or call 0845 130 4646.

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Sparsholt College, Winchester

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PREFACE

WHY ANOTHER HORTICULTURAL TEXTBOOK?

Well, the world of horticulture is constantly changing, and the Royal Horticultural Society, one of the major guardians of excellence in this area, has rethought and restructured the information required to obtain its highly regarded qualifications. These changes make the transition through the levels of knowledge more logical and smoother for anyone wishing to know more about plant selection, propagation, growing, use and design.

This is the first textbook written to take account of these latest adjustments and provide sequential development over a wide range of topics, arranged in three broad parts, allowing quick access to an appropriate starting point for readers to move forward in their quest for horticultural knowledge and understanding.

Most people start learning about plants through their families, especially grandparents: the techniques and dates of practical operations have been handed down from one generation to the next, over time, but the reasoning and science behind these events has become confused or totally lost. Therefore with changes such as the advent of climate change, the expanded plant palette at our disposal, the re-awakening of interest in the natural world and the joy of feeding our families by home production of fruit and vegetables, we need to revisit our timings and methods and ensure maximum success with minimum inputs of resources, including the efficient use of valuable time.

Also the mental and spiritual wellbeing found within the activities of plant growing and use can not be understated at this time, with the continued rapid development of horticulture as a successfully method of therapy: an antidote to busy, sometimes stressful, lives. Many people are looking to enhance, or produce, their own green oasis; the chapters on the selection and use of plants will assist this process.

This textbook is not only for students wishing to study for examinations leading to valuable qualifications, but also for all those who have any interest, or an emerging puzzlement, of how plants grow, develop and can be used.

Structured in three parts, Part 1 The foundations, Part 2 The adjustments and Part 3 The applications, the book provides a clear development of the material provided by an experienced team who have between them amassed over 250 years of horticultural and 150 years of teaching experience; and are still learning.

STRUCTURE OF THE BOOK

With the resurgence of interest in the 'green agenda' and grow-your-own campaigns, such as the National Trust's 'Plot to Plate', the Royal Horticultural Society's 'Grow your Own' and a number of major supermarkets leading national campaigns (also related to encouraging uptake by school children and their wider families) there has never been a better opportunity to spend some time exposed to the **foundations** of growing; being reminded of the **adjustments** that can be undertaken and introduced to the **applications** that can be achieved within your own community. Also, with the publication of a new syllabus emerging from the RHS and other horticultural qualifications, we have taken a fresh look at the fundamentals of horticulture, remembering to include an emphasis on the first syllable of fundamentals.

One of the current buzz-phrases of education is 'distance travelled'. Think of this also within a garden context. How far have you travelled on these subjects?

- ✿ Environmental concerns
- ✿ Sustainable developments
- ✿ Reducing waste
- ✿ Offsetting climate change
- ✿ Promoting the balance of wildlife

This book is divided into three parts: developing a sequential progression of interest and knowledge. Part 1, entitled **The foundations**, as the name suggests provides an introduction to the background techniques and topics that underpin the whole process of the successful growing of plants. Part 2, **The adjustments**, consists of the developmental topics that having mastered, or at least understood, the foundations lead on to.

Finally, Part 3, **The applications**, shows the diversity that horticulture encompasses, including chapters on landscape design; plant use; pest, diseases and disorders; and commercial production. These provide an increased understanding of your plot and build on its history, providing a balance of conditions to aid your improved success, whatever your starting point.

HOW TO USE THIS BOOK

Do you wish to enjoy or endure your studies? This new, full colour, textbook has been developed to balance the need for an understanding of technical language with full descriptions of traditional and modern, fully illustrated, practical techniques, all designed to enhance the joy of study.

Each chapter begins by listing the key concepts that the chapter covers and features an opening case study showing the practical applications of the theory covered.

The main text is supported by a comprehensive glossary with key terms clearly highlighted in **bold** in the text. Within the chapters themselves, given within boxed sections, are extra details or further examples, which provide information to support RHS Level 3 qualifications, and boxed case studies show the real-life applications of the theory.

Chapters are rounded off by summaries, further reading lists and some revision questions for you to confirm your knowledge or to highlight where further study time is required.

All the major horticultural syllabuses have been considered and the main text is aimed at the RHS Level 2 learner, but will also inform the keen gardener or those seeking some information to get started. Clear signposting to the RHS Level 3 areas of information are highlighted within boxes at the end of each chapter, helping students to organise their learning. However, it should be noted that some topics have been re-allocated into Level 4 and these are covered in Chapters 9 and 15. Where comprehensive tables have been developed these are provided as appendices to maintain the smooth flow of the text: they make excellent revision notes. The text also supports NPTC (National Proficiency Test Council) City & Guilds horticultural qualifications, such as Extended Diploma, Diploma and Subsidiary Diploma in Horticulture at Level 3 and Level 2, together with BTEC National Diploma and Certificate in Horticulture.

The book has been designed so that you can dip in and out of the different parts and chapters as you wish, to experience new information or remind you of forgotten facts, methods or solutions. Enjoy your time becoming informed and guided around the fantastic role we can play in the growing and caring for the natural world, and especially the parts we may own or have responsibility for and can influence.

ONLINE RESOURCES

To continue your studies supporting material is available from www.cambridge.org/horticulture.

This includes:

- ✿ an extended glossary of common horticultural terms
- ✿ mind maps serving as study aids to show the structure and relationship of topics
- ✿ all figures from the book as JPEG files and PowerPoint slides
- ✿ plant photographs for identification purposes
- ✿ exam techniques for those taking the RHS exams
- ✿ example questions with outline answers
- ✿ video demonstration of chip budding technique.



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