

Kiwifruit: The Genus *Actinidia*

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Kiwifruit is one of the few new fruit to be commercialised over the past century – others being macadamia, avocado and blueberry. Much of the early commercial development of this crop occurred in New Zealand, particularly during the latter half of the 20th century, and production rapidly followed into other countries around the world, including Italy, France, Greece, Chile, Japan and the USA. These developments were based on a very limited range of germplasm and almost entirely on one cultivar, ‘Hayward’.

The origin of kiwifruit is, in fact, China which has a rich diversity of species within the genus *Actinidia*. However, access to germplasm and understanding of the diversity of this genus outside of China has been very limited until recently. Further, the successful commercialization of kiwifruit in other countries has resulted in Chinese fruit-growers and scientists being more aware of the value of this germplasm within China, along with the opportunity to establish a commercial industry within that country. Accordingly both scientific and commercial activities have accelerated over the past 30-40 years. Nonetheless, much of the information that has resulted from such developments has been published mainly in Chinese and has been difficult to access elsewhere.

‘Kiwifruit: The Genus *Actinidia*’, has, for the first time, summarised in English much of the published scientific knowledge secured on this crop in China along with details about the Chinese industry. It includes references to research elsewhere in the world, espe-

cially in New Zealand and in Italy. The book is authored by Professor Hongwen Huang, Director, Wuhan Botanical Garden, Chinese Academy of Sciences, Wuhan, China in association with 14 other contributors from a number of other research institutes and universities across the country.

The book is presented in eight chapters: Systematic and Genetic Variation of *Actinidia*; Species; Natural Distribution of Genus *Actinidia*; Domestication and Commercialization of *Actinidia*; Biology, Genetic Improvement, and Cultivar Development; Main Cultivars in Commercial Production; Cultivation and Management; Harvest and Storage.

The real value of this text is the comprehensive information that is presented on the different *Actinidia* taxa, their distributions, the relationships between them and their commercial potential (Chapters 1, 2 and 3). This includes detailed discussion about the taxonomic and nomenclatural changes that have recently occurred (and will no doubt continue to occur in this extensive genus).

Chapter 1 provides an excellent presentation about the challenges involved in the taxonomic treatment of the genus. It includes very good summaries of the previous attempts at classification of species and of the revisions that have recently occurred. Topics such as ploidy variation, pollen characteristics, flower morphology and sex variation (all *Actinidia* taxa are functionally dioecious) and the evolution of particular species are very well covered.

Chapter 2 in particular is richly illustrated with color photographs showing details of the vegetative, floral and fruit characteristics of each of 106 species and varieties within

the genus, and detailed maps showing their current distribution within China. Chapter 3 further develops the information about species distribution by defining, in detail, the ecological characteristics of each of the regions where the species are located naturally. This information would have been enhanced had some photographs been included showing the *Actinidia* germplasm in these natural locations (noting that three such images are included later on in the text in Chapter 5). Chapter 6, which describes in detail characteristics of main cultivars that are currently used in commercial production, is also very informative in that it includes descriptions of those involved within the industry in China (which differ somewhat from those used in other countries). This section too is well illustrated with excellent color photographs.

The other chapters involving domestication, commercialization and the management of commercial crops, although important, are of less value than the chapters outlined above. More detailed information on those topics is available from other countries in more comprehensive texts on the pre- and post-harvest management of this crop. Nonetheless, the information is valuable in that it provides detail of production practices in China, including information about some of the pests and diseases that are not present in other kiwifruit-producing countries.

Overall the text is very well presented with rich augmentation using many color photographs, colored graphs and a large number of tables. It is well laid out and there are few errors. Translation into English from Chinese has been well managed and the text is mostly easy to read. There are, nonetheless, some issues that should be addressed in any revision: single and not double quotes should be used

around cultivar names such as ‘Hayward’; the key shown in many of the maps (starting with Figure 2.122, page 131) is not explained until page 185; words such as monsoon (not moonson – pages 181, 182), talk instead of stalk (pages 130, 132 and elsewhere) and maritime (not marital, pages 181, 182) need to be corrected; “plum blooming rain significance” (page 178) is not understood; Vc (chapter 2) and VC (chapter 6) should be standardised. The excellent color photographs of the different species shown on the cover and on pages 218 and 224 would be considerably enhanced if a key was included naming the different species. Finally, the index needs to be arranged in alphabetical order and not date order within each family name (the current order does not follow accepted scientific convention).

This text is essential reading for anyone involved with the science and management of kiwifruit. In many of the topics covered it greatly adds to prior knowledge about this genus and provides valuable information about the industry in China. It is also a valuable text for those involved with the breeding of other fruit species and with interests in plant ecology, taxonomy and botany.

A previous version of ‘Kiwifruit: The Genus *Actinidia*’ was published in China in 2014 by the Scientific Press, Beijing. The 2016 version includes some additional material, such as descriptions of the latest cultivars from New Zealand, and has different page numbers.

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