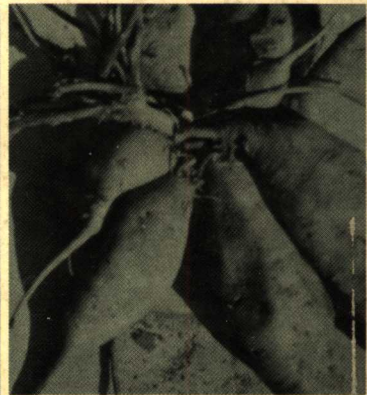
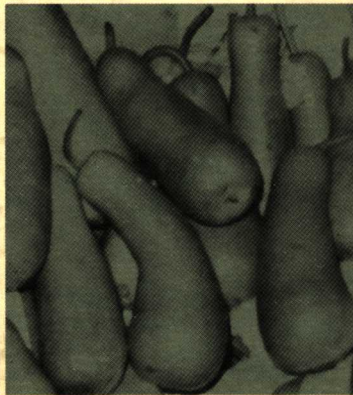
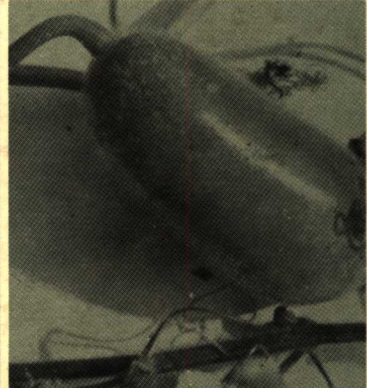
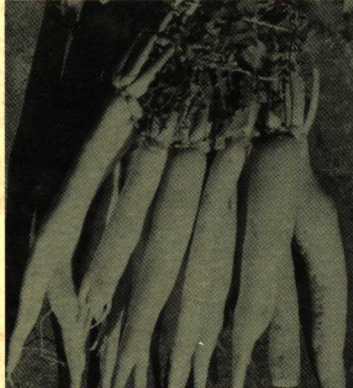
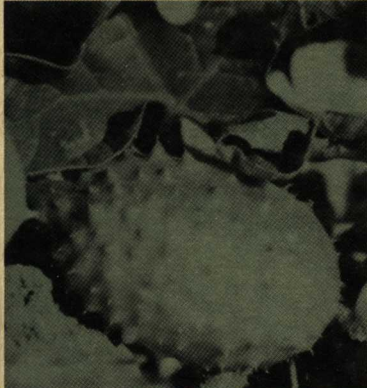
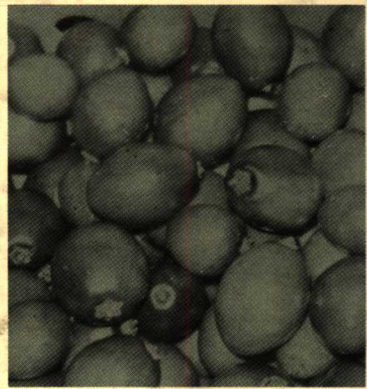
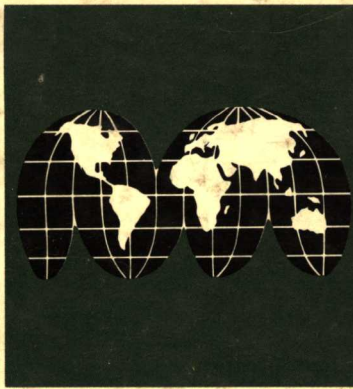


# World Vegetables

PRINCIPLES, PRODUCTION AND NUTRITIVE VALUES



**Mas Yamaguchi**

# WORLD VEGETABLES

Principles, Production and Nutritive Values

Mas Yamaguchi

Department of Vegetable Crops  
University of California at Davis, California

**avi**

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# Preface

This text and reference book was written because of the urgings of my colleagues here and abroad and also by my students to fill the need for a comprehensive book describing vegetables important as food crops of the world.

The material in this book was first used as outlines for the course on world vegetables taught by the staff of the Department of Vegetable Crops at the University of California at Davis. Over the course of the decade the author taught the course, new topics were added with each succeeding year. In 1978 the handouts were revised and compiled into a syllabus. In addition to the students taking the course, the syllabus was purchased and used by others as a reference book. Word of its existence travelled far; the syllabus is presently used by one other university in the United States and by another in a foreign country.

This edition has been extensively revised; many new materials and references have been added. Included are many photographs taken by the author in his travels abroad.

The book has three parts. The first is introductory and background meant for students who are not familiar with vegetables as food crops. Included is a chapter on toxic constituents and some interesting past and present usage of vegetables. Part II is a very short summary of vegetable physiology, especially the climatic effects on growth and some methods used to grow the crops under adverse conditions. The third and main part covers the world vegetables, divided into starchy crops and succulent vegetables. The appendix is intended to supplement the main parts.

Teaching aids are included. For example, Fig. 8.1 summarizes the exotic root and tuber crops; more detailed accounts are presented in the chapters following. Likewise, the physiology of onions is summarized in

Fig. 17.3, that of cole crops in Table 19.1, and the important legumes used as vegetables are given in Table 21.1.

Although the pests and diseases are only superficially mentioned, they are of major concern in all vegetable growing regions. To adequately cover these aspects would require additional expertise. There is a constant change on recommendations for their control as new advances are made and old ones are discarded.

It is hoped that this book adequately fulfills the need of students and worker in the field.

*Mas Yamaguchi*

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The author wishes to acknowledge the use of much materials and information derived from his many colleagues, especially Professors J.F. Harrington, O.A. Lorenz, L.L. Morris, C.M. Rick, P.G. Smith and J.E. Welch, who were among the first lecturers in the course organized in 1967.

There were many people involved in the mechanics of getting the syllabus and the book ready for print. They are Marilynn Berry, Karen Murphy, Moira Tanaka and Marcia Carey for the illustrations; Betty Perry and Kathy Hykonen for typing the manuscript; and Corky Webb, Nancy Folsom and Anne Rundstrom for typing the tables.

Also, the author appreciates and thanks Drs. O.A. Lorenz, V.E. Rubatzky, I.W. Buddenhagen, A. Kader and B.S. Luh, all of this University, for reviewing the various chapters. Their criticisms and suggestions were most helpful.

Last but not least, the author wishes to thank his long time friend and colleague, Dr. Doran L. Hughes, for his most helpful advice and criticisms throughout the years, his expert reproductions of the color slides into black and white photographs and the review of the entire manuscript.

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# Part I

## Introduction

