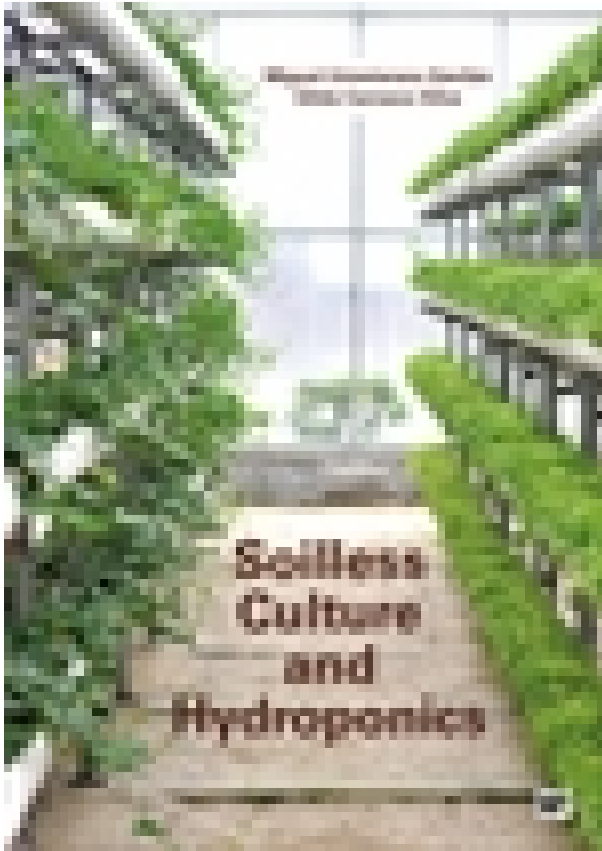


# Soilless Culture and Hydroponics



**Editorial:** Mundiprensa

**Autor:** MIGUEL URRESTARAZU GAVILAN,  
GILDA CARRASCO SILVA

**Clasificación:** Divulgación General >  
Agricultura

**Tamaño:** 17 x 24 cm.

**Páginas:** 288

**ISBN 13:** 9788484767664

**ISBN 10:** 8484767663

**Precio sin IVA:** \$21598.00

**Precio con IVA:** \$21598.00

**Fecha publicacion:** 15/06/2023

## Sinopsis

This book is aimed at professionals and technicians, students, and beginners, and has been written with the necessary rigour for productive success and environmental care.

It also allows those who are new to these techniques to delve deeper into this science and technique, recognising the keys and rules for obtaining promising results. This work is complemented with diagrams, figures and photographs that provide the reader with the fundamentals that complete the description of the systems and principles that govern these techniques.

### **CONTENTS:**

bases of soilless culture and hydroponics - substrates used in horticulture and their relationship with crop management - nutrient solutions for fertigation - fertigation techniques in soilless culture

**Miguel Urrestarazu Gavilán** is Full Professor of Soilless Crops at the University of Almería, Spain. Doctor (Dr.) in Protected Agriculture from the University of Almeria with a background in biological sciences at the University of Granada. He has carried out research and teaching work at undergraduate and postgraduate level in soilless and hydroponic farming systems at the university and has continued his professional and academic work on five continents. He is the author of many books, book chapters and scientific research articles, an activity that he carries out both in terms of dissemination and transfer to the productive sector, as well as in leading journals in the field of international scientific horticulture that respects the environment.

**Gilda Carrasco Silva** is Full Professor at the University of Talca, Chile. Doctor of Philosophy (PhD) University of London, Wye College, United Kingdom, and Agricultural Engineer from the Pontificia Universidad Católica de Chile. Her area of expertise is vegetable nutrition, hydroponics, and soilless cultivation techniques, which she has recently applied to the development of vertical agriculture. She has directed research and innovation projects in this specialty, undergraduate and postgraduate students, has written books, book chapters and scientific articles for research and technology transfer. She has given seminars and lectures in Latin America and Europe.

## Indice

### **CHAPTER I BASES OF SOILLESS CULTURE AND HYDROPONICS**

- 1.1. Concept
- 1.2. History
- 1.3. Classification
- 1.4. Systems

### **CHAPTER II SUBSTRATES USED IN HORTICULTURE AND THEIR RELATIONSHIP WITH CROP MANAGEMENT**

- 2.1. Substrates and related terms and concepts
- 2.2. Optimal requirements for substrates
- 2.3. Characteristics and properties of the culture substrates
- 2.4. Inventory of horticultural substrates: classification and properties
- 2.4.6. Compost
- 2.5. The substrates and their relation to other productive factors of the culture
- 2.6. Management of the agrosystems using substrates. Substrate choice and parameters of the culture unit
- 2.7. Conclusions

### **CHAPTER III NUTRIENT SOLUTIONS FOR FERTIGATION**

- 3.1. Introduction
- 3.2. Example 1. The simplest case: preparing the ideal nutrient solution without considering the irrigation water with the commercial fertilizers expressed in weight
- 3.3. Example 2. Case where we consider the irrigation water and the ideal nutrient solution expressed in equivalent or molar concentration
- 3.4. pH
- 3.5. The electrical conductivity of nutrient solutions
- 3.6. Management of a nutrient solution for crops with different cultivars
- 3.7. Management of nutrient solutions depending on the culture's phenology and the intended productive purposes. The universal nutrient solution
- 3.8. Diagnosis and interpretation of the analyses of different nutrient solutions used in fertigation. Management recommendations
- 3.9. Some recommendations for fertigation management in relation to the environment and human health

### **CHAPTER IV FERTIGATION TECHNIQUES IN SOILLESS CULTURE**

- 4.1. Introduction
- 4.2. Water consumption
- 4.3. Water consumption and mineral absorption
- 4.4. Factors that affect water consumption

- 4.5. Aims of fertigation
- 4.6. Fertigation control methods. Classification
- 4.7. Fertigation methods. Classification
- 4.8. Practical numerical examples of irrigation
- 4.9. Summary and recommendations

#### References

Terminology used in soilless culture

Index of figures

Index of photographs

Paraninfo Argentina Calle José Abascal, 56 (Utopicus). Oficina 217. 28003 Madrid (España)

Tel. Fax

clientes@paraninfo.com.ar [www.paraninfo.com.ar](http://www.paraninfo.com.ar)