



# Citrus

by John Mason and Staff of ACS Distance Education

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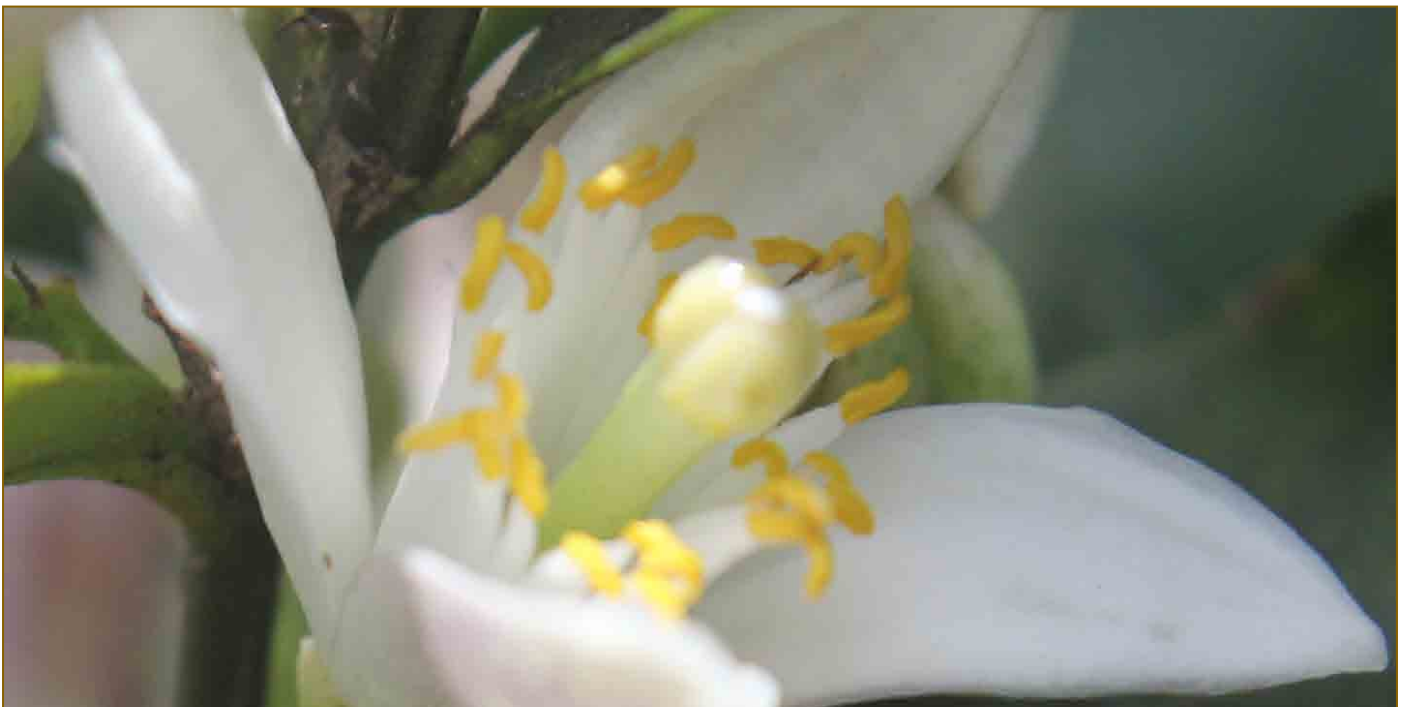
# CHAPTER 1 INTRODUCTION: SCOPE, NATURE, BOTANY AND TAXONOMY

*The citrus genus varies widely in respect to the variety of species and fruit types within it - making this group of plants quite exceptional. The distinctive glossy green foliage and attractive fragrances of leaves, fruit and flowers add to the charm and make citrus highly sought after and widely grown by both commercial producers and enthusiasts.*

## CITRUS TODAY

Citrus fruits are significant in terms of global trade because they are the highest value fruit. In this market they are sold as whole fruits or as juice. The volume of world production has steadily increased over recent decades and oranges account for more than half of all citrus production. More than half of the world's production comes from the Northern Hemisphere and, in particular, from the Mediterranean and United States. In the Southern Hemisphere, Brazil is a key producer and the world's largest exporter of oranges.

Besides their significance in global trade, citrus trees are versatile and useful trees for the home garden. As well as bearing desirable fruit they have attractive blossoms and foliage, and they exude a wonderful fragrance. Although they are often viewed as plants which do best in Mediterranean and subtropical regions, they can be successfully grown in many climatic zones if provided with suitable conditions. They can be grown in most areas where there is no risk of constant heavy or severe frost. In these regions, they are best grown in greenhouses or as conservatory plants.



Citrus flowers have four petals

## Harvesting

Autumn is a great time for many types of citrus fruit because they ripen at this time of year. In fact, if varieties are chosen carefully it is possible to extend the harvest of these fruits throughout much of the year because some mature in spring, others in autumn and some in winter.

Increases in world production represent a growing sentiment towards healthy food products along with increased global affluence. For the home gardener, there can be few greater accomplishments than eating fruit straight from the tree, or using fruits to make marmalade, freshly squeezed fruit juice or refreshing lemonade.

## A Brief History

Citrus are thought to have been cultivated in the ancient world (Egypt, Greece and Mesopotamia) as early as 4,000 BC. The “citron”, a less juicy type of lemon, is referenced in the Bible in the Old Testament. It would seem that citrus was introduced to the Mediterranean and northern Africa through Arab trade about 1,000 BC. It is likely that the Roman Empire helped it spread throughout Europe.

It is known that citrus plants were grown in Spain by the end of the Middle Ages. Christopher Columbus is said to have introduced limes to the West Indies from Spain in 1493. Spanish explorers also introduced them to other parts of the Americas. Today, the United States, Mexico and Brazil account for almost a third of total world trade in citrus. The global market for citrus only really opened up in the nineteenth century and remarkably orange juice only became established just before World War Two.

## BOTANY OF CITRUS

The citrus genus includes about a dozen or so species mostly of tropical and subtropical origin. All citrus belong to the Rutaceae family.

**Family: Rutaceae**

**Genus: Citrus**

A wide range of common names are used for different species and citrus hybrids including lemon, lime, orange, grapefruit, mandarin, tangerine, cumquat and calamondin.

## Appearance

They are mainly small to medium evergreen, sometimes spiny, trees. The leaves are thick, leathery and usually glossy making them attractive in their own right. The leaves and skin of the fruit usually contain numerous oil glands.

Flowers are typically white, occasionally purple, and often very fragrant. They are borne in axillary clusters and are either solitary or appear in pairs. The aromatic, leathery skinned fruits have fleshy and often very edible pulp.

## Reproduction and Variability

Citrus classification is not straightforward from a botanical perspective. Many varied types of citrus have emerged because hybridisation, sports and apomixis occur readily in this genus. Hybridisation is where two different species interbreed. Sports are spontaneous mutations in plants which cause parts or whole plants to form