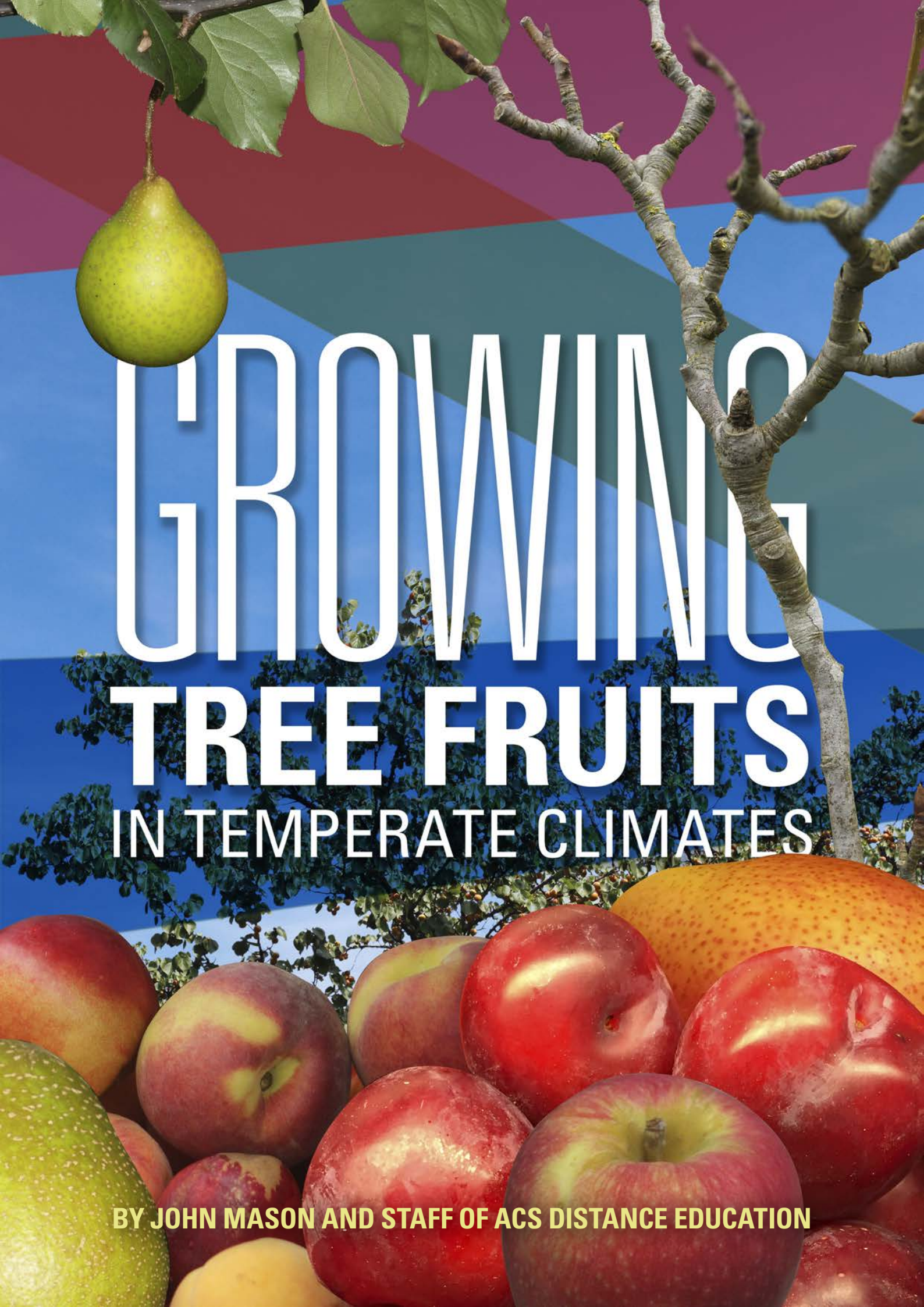


GROWING TREE FRUITS IN TEMPERATE CLIMATES

BY JOHN MASON AND STAFF OF ACS DISTANCE EDUCATION

CONTENTS

CREDITS

Written By:
Staff of ACS Distance Education

Photos:
John Mason and Stephen Mason

Layout & Illustration:
Stephen Mason

Editorial Assistants/Contributors:
John Mason
Dip.Hort.Sc., FCIH, FAIH, FPLA
Gavin Cole
B.Sc.
Marie Beermann
B.Sc. Hort., M.Sc. Hort., PDC
Adriana Fraser
Cert.Hort., Adv.Dip.Hort.

Published by:
ACS Distance Education

P.O. Box 2092, Nerang MDC,
Queensland, Australia, 4211
admin@acs.edu.au
www.acsbookshop.com

P O Box 4171, Stourbridge, DY8 2WZ,
United Kingdom
admin@acsedu.co.uk
www.acsebooks.com

ISBN: 978-0-9954356-6-7

The information in this book is derived from a broad cross section of resources (research, reference materials and personal experience) from the authors and editorial assistants in the academic department of ACS Distance Education. It is, to the best of our knowledge, composed as an accurate representation of what is accepted and appropriate information about the subject, at the time of publication.

The authors fully recognise that knowledge is continually changing, and awareness in all areas of study is constantly evolving. As such, we encourage the reader to recognise that nothing they read should ever be considered to be set in stone. They should always strive to broaden their perspective and deepen their understanding of a subject, and before acting upon any information or advice, should always seek to confirm the currency of that information, and the appropriateness to the situation in which they find themselves.

As such, the publisher and author do not accept any liability for actions taken by the reader based upon their reading of this book.

CHAPTER 1 INTRODUCTION

You don't need to be an expert to successfully grow your own tree fruits, nor do you need to have the space an orchard provides. Even the passageway down the side of a house can be used to grow espaliered trees so long as they receive adequate light.

Tree Selection

So, what makes a good garden fruit tree? Before you rush out and buy a fruit tree, there are a few points to think about:

- Is it deciduous or evergreen? Deciduous trees provide shade in summer but allow light through in winter.
- How tall and wide will it grow, and how dense is the foliage?
- Does the fruit stain patios, pathways, or clothing? Mulberries are notoriously troublesome!
- Does it require special pruning techniques? Pruning certainly improves cropping for many fruit trees, but some bear abundant fruit even when rarely pruned.
- Does it need regular spraying? This may depend on where you live. Some varieties are more prone to fungal diseases in warm, humid climates than the same variety grown in a cooler area.

Apple 2 years from planting

The Downside

Unfortunately, there is usually a downside to anything and the main problems with fruit trees are:

- Many of them also attract pests (birds can be a problem wherever you live, other native animals and insects vary depending on the locality but many are attracted to fruits).
- If you don't pick the fruit they will drop and make a mess under the tree.
- Most fruit trees produce their entire crop within a short space of time, so if you want fruit over a longer season you will need to plant a number of fruit varieties that produce at different times. Also, be prepared to give excess fruit to friends and workmates, bottle them as preserves, or cook them in some other manner.
- Most fruit trees require more maintenance than other plants – including spraying (with natural or chemical sprays), fertilising and pruning. Many tropical fruits are prone to fruit fly attack.

The winter orchard before pruning

Where to Plant Them

In a garden bed

A mulched garden bed can be an excellent place for planting fruit trees. In this setting, the trees become an attractive ornamental feature, complementing the other plants in the bed. Take care when weeding and hoeing though, as surface roots may be damaged. Also think about access to the tree, so that you don't trample the plants growing in front of, and under, the tree.

In a lawn

This is the most common place for growing fruit trees, but it isn't ideal. Grass competes with the tree for water and nutrients, and it's all too easy to scalp young trees with the mower or grass trimmer. If you do grow fruit trees in the lawn, keep grass well away from the trunk.

On a mound

This is ideal for trees like citrus, which prefer good drainage. Mounding is also a good idea to aid drainage if you have a heavy clay soil.

Against a wall

The espalier is an ancient method of training fruit trees to grow flat against a wall. It's ideal for ripening fruit in cold climates and, more importantly, for making use of limited space. The espaliered tree can be grown against a wall or fence, on a wire or trellis. It can be low (knee height) or tall. As well as bearing useful fruit, the tree becomes an unusual and eye-catching feature of the garden.

As a tub plant

Dwarf varieties can be grown in large tubs on balconies, courtyards, decks, or elsewhere. Providing they are well looked after (plenty of water, good quality potting mix and adequate nutrients), you can expect the trees to bear a reasonable crop of fruit for their size. Good fruit trees for tubs include dwarf peaches and nectarines, dwarf apples, and citrus (e.g. lemons, mandarins, cumquats).

How to Grow an Espalier on a Wall

Espaliered trees always look stunning and simply require a little time and patience to establish. They are perfect for courtyard gardens, narrow spaces, or along boundary walls.

Horizontal Espalier

Here, the aim is to train the main branches to grow horizontally along the wall, outwards from the upright stem. The wires, which support the branches are fixed onto the wall, beginning at about 30–60cm from ground level and then at regular 30-60cm intervals.

Plant the tree as close as possible to the wall, then cut it back to just above the first wire, leaving three buds on the tree. The top bud will form the central stem, and the shoots from the other two buds on opposite sides of the stem are tied to the wire. All other shoots are removed. Next year, cut the central stem just below the second wire and lead two more shoots from the lower buds to each side of the wire. Keep doing this, until you reach the top layer of wire.

Nectarines - many fruits change colour as they ripen, but not all.

Oblique Palmette Espalier

The aim is to train the main branches to grow along the wall at 45o to 60o angles from the main upright stem. As with the horizontal espalier, the wires are fixed on the wall at 30-60cm intervals.

After planting, cut the tree back to a height of 30-60cm. When growth begins in spring, choose three suitable shoots; one will form the main stem, the others will form the oblique angled branches. In summer the two side shoots are tied to the lowest wire at a 45o angle, and all other shoots are removed. The following winter, cut back the central stem to just below the second wire and again choose three shoots to form the next level.

Apples, pears, stone fruit, and olives can be readily grown as an espalier. All you need to do is prune out any congested growth during the growing season.

Good Garden Fruit Trees for a Range of Climates

It is always advisable to buy fruit trees from specialist nurseries - they will stock varieties suitable for your area, and many will be grafted on to the most appropriate rootstock to ensure vigorous growth and fruiting. Check with your local nursery to see which varieties of each of the fruits listed below are available, and will thrive where you live.

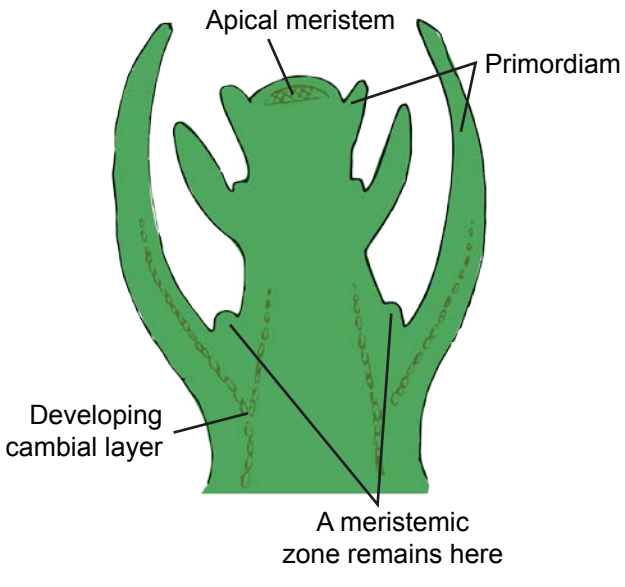
CHAPTER 2 FRUIT TREE SCIENCE

By understanding how fruit trees develop, grow and produce fruit, we can better understand how to treat them to produce and maintain healthier trees, and ultimately optimise the crops we are trying to grow.

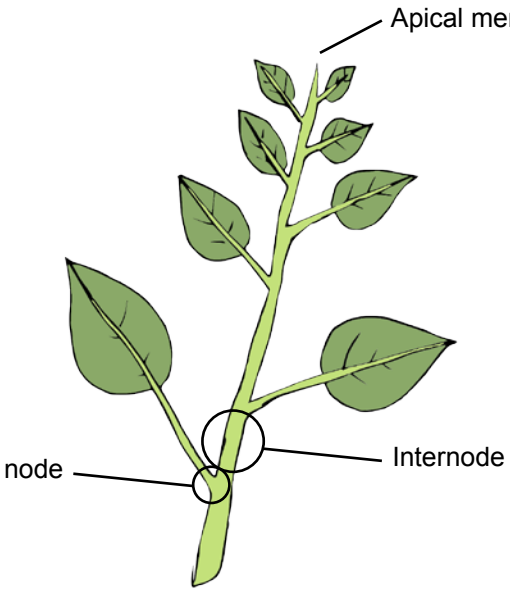
Plants grow from 'meristematic cells'. Meristematic cells are in effect the 'stem cells' of a plant. They are undifferentiated cells that can reproduce and as they grow they can transform into any part of the plant that is needed, whether that be a leaf, stem, flower or something else.

How Shoots Develop

Shoots that emerge from a seed and buds that emerge from a plant stem contain a cluster of cells at their end or tip that are meristematic. Areas of plats where cells divide are called meristems and these are located at the tips of shoots and roots. This type of growth is often called primary growth.



Meristem of growing shoot

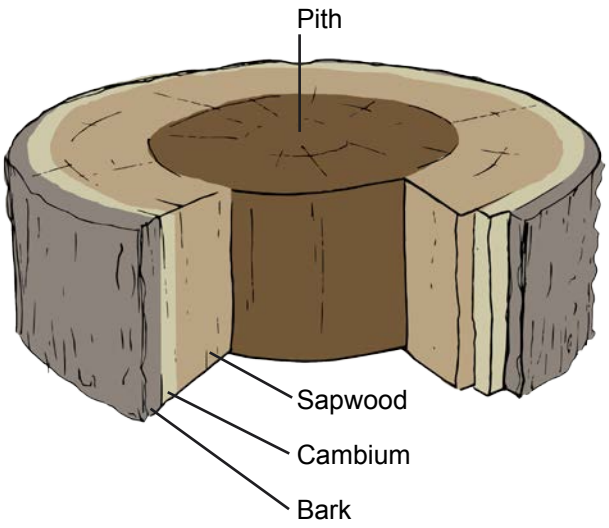


Leaf-shoot

How Wood becomes Stronger

Plants that grow into trees or vines need strong stems in order to withstand not only wind and rain; but also the weight of developing fruits. If the branches of a tree or stems of a vine become too heavy with the weight of water or fruits on the foliage they may break, and when that happens the fruit can be lost.

Plants strengthen their stems by getting thicker and also by getting stronger. This is not done through cell division, but by a build-up of layers. The thickening of stems takes place in the cambium layer. Again, it contains meristematic cells. This process is often referred to as secondary growth.



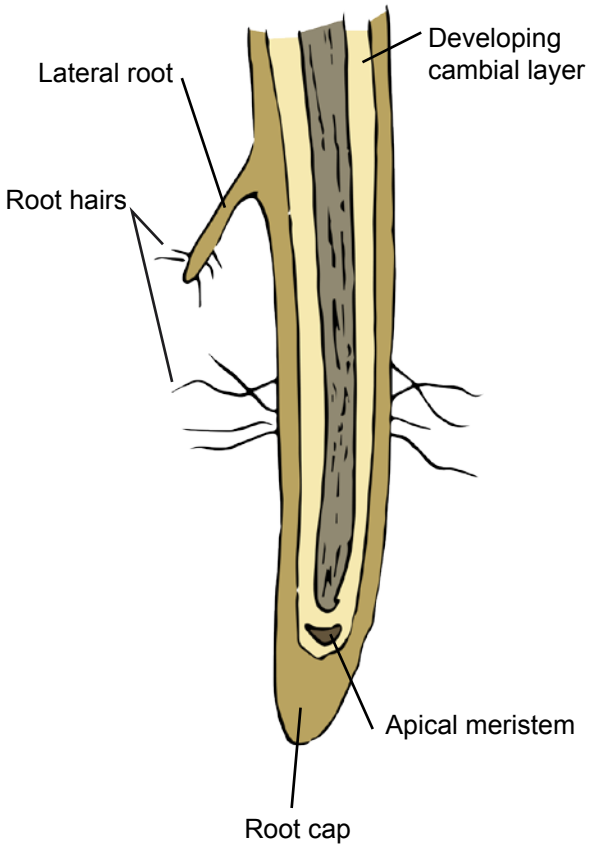
Cross section of a tree

Lignification

In the early stages of growth plant cell walls are made up mostly of cellulose. These walls are quite thin but over time become thicker as more cellulose is added. Later on a layer of lignin is added and this is a hard substance which provides strength. A further layer of lignin completes the strengthening and stems become sturdy.

How Roots Develop

Like shoots, roots grow via elongation of meristematic cells at the tips.



Developing root tip

Pear Williams Bon Chretein developing over spring