

## Part 2.

### BIOLOGICAL CONTROL, COMPANION PLANTING AND HERB GARDEN DESIGN

#### GARDENING WITHOUT CHEMICALS

Many people grow their own vegetables because that they know what goes into the soil and onto the plants. Growing vegetables without resorting to chemicals isn't difficult; it simply means you need to go about things in a different way. If you see a bug or a caterpillar in the vegetable patch, don't immediately spray it with a chemical pesticide. It may be a beneficial insect or, even a pest, there are less damaging ways than using chemicals to keep the garden healthy and productive.



Bergamot

way

if it is

#### Biological Control

Biological control is the use of an organism (plant, insect or animal) to control pests and diseases. This commonly involves the use of diseases which affect the pest or weed (the disease might be spread by an insect) or beneficial insects which either eat or parasitise the pest.

In the vegetable garden useful predators of pests include a wide range of animals such as lizards, frogs, dragonflies, spiders and birds. To be effective they need places to shelter and breed (eg. hollow logs), food (insects, nectar, pollen) and water. Insect-eating birds can be attracted into the area by growing native plants. Many insects are also good predators of pests:

- Ladybird beetles and their larvae eat aphids
- Hover flies (Syrphid flies) eat aphids
- Lacewing will control mites, caterpillars, aphids, thrips, mealy bugs, some scales
- Predatory mites eat other pest mites. They can be purchased and released in the crop.
- Praying mantis eats most other insects, pests or otherwise.

There are many other predators and as long as there is a suitable environment for them, and the sprays are minimised, they can do much of the work for you.

#### Attracting Parasites

Wasps attack many types of insects including caterpillars. Some plants (eg. chamomile, celery, hyssop, tansy, dill, and yarrow) can be planted to attract such wasps to the garden.

Woolly aphids parasites are attracted by clover (*Trifolium* sp.).

Lacewings which feed on aphids and other insects are attracted by sunflowers.

Goldenrod (*Solidago* sp.) attracts preying mantis and some other predators.

Hoverflies are strongly attracted to buckwheat.

#### Companion Planting

Companion planting is based on the idea that certain plants grow better in close proximity to other plants. The types of benefits that these plant associations offer include:

- Beneficial insects are attracted to the garden. These may act as predators to harmful pests, or pollinators to surrounding flowers.
- Harmful insects are repelled through the secretions of aromatic oils.

- Plants are grown to improve soil fertility and structure.

Many of the claimed effects of companion planting have not as yet been scientifically proven, however others do have proven benefits. For example, the legumes (pea-type plants) have symbiotic (mutually beneficial) relationships with a variety of soil micro-organisms that results in the extraction of nitrogen from the air, converting it into solid nodules on the plant roots where it eventually becomes available for use by other plants growing alongside them. This is a scientifically proven method.

You should treat the recommendations for companion planting as combinations which can be tried out but, unless stated otherwise, do not expect dramatic results. It is said that companion planting must always be given time to work as the effects are rarely immediate.

### **Herbal Repellents for Companion Planting and Personal Comfort**

Planting the right herb in the right place can help minimise pests in that part of your garden. Herbal repellents vary in their effectiveness according to the species, how and where it is grown, and even the time of year. They are not 100% effective, but they can certainly reduce the chances of a problem and the need to use chemical sprays.

#### Some Herbs To Use

- *Coleus caninus* to repel dogs and cats.
- Garlic will reduce the incidence of several fungal diseases, such as Black Spot on roses and Peach Leaf Curl, and helps deter borers when planted around the base of fruit trees.
- Chives, onion, leek and other related herbs all have a similar effect.
- Wormwood (*Artemisia*) and garlic help repel codling moth from apples.
- Rosemary helps repel white cabbage butterfly.
- Chervil helps deter aphids, snails and mildew.
- French lavender planted near potatoes helps control nematodes.
- Sage helps repel aphids on roses, carrot flies, and white cabbage butterfly.
- Thyme and peppermint planted next to tomatoes help white flies.
- Most lemon-scented plants are used to repel mosquitoes and other insects.



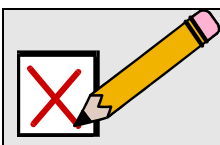
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Lemon Grass

### **SET READING**

Read the following chapters from Growing and Using Vegetables and Herbs before attempting Self-Assessment Test 3:

- Chapter 1, Vegetables and Herbs: An Introduction
- Chapter 3, section on Companion Planting



#### **SELF ASSESSMENT**

Perform the self-assessment test titled 'Test 3'.

If you find yourself getting the answers wrong, go over the notes from this lesson again and then repeat this test until your answers are correct.

## DESIGNING A HERB GARDEN

### Potagers and Picking gardens

All too often the vegetable garden is placed in the furthest corner of the yard, where it soon becomes underused and neglected. A better idea may be to develop a special garden area (sometimes called a potager) for growing edible, useful and colourful plants such as herbs, fruits, vegetables and cut flowers. Attractive broad paths, an overall interesting design, and possibly an ornament such as a sundial or weather vane placed in the centre of the garden, will help to make this area more user-friendly.

### Fragrant herbs and shrubs



Rosemary

One of the more subtle attractions in the vegetable and herb garden is fragrant plants. Most of us have cherished memories of scented childhood gardens, and it's hard to walk past a scented plant without stopping to smell its perfume or crushing its leaves to release the volatile oils. Rosemary, lavender, scented geraniums, thyme, scented roses and flowering citrus are just some of the many fragrant plants that can be included in the garden.

### Herb Lawns

Herb lawns are a charming and unusual alternative to grass. They are especially useful for small lawn areas which are difficult to mow, and which are not subject to high traffic. When crushed underfoot, most herbs will release an aromatic fragrance, and some will also repel insects. Some popular spots for herb lawns are surrounding a sun-dial or statue, beside a garden seat, and underneath the clothes line. Just watch out for bees though, especially when the creeping thymes are flowering.

To develop a herb lawn, you will need to choose a mat-forming species as these will soon spread out and cover any areas of bare soil. Examples of herbs to use include:

#### Full sun

Lawn (Roman) chamomile (*Anthemis nobile*), creeping thyme (many varieties including *Thymus* 'Albus' – white flowering thyme, *T.* 'Aureus' – golden carpet thyme, *T.* 'Purpureum' – purple flowering thyme, *T. pseudolanuginosus* – woolly thyme), Lambs Ear.



#### Wet or damp areas

Mints (particularly low-growing types such as *Mentha pulegium*), native violets (*Viola hederacea*, *V. betonicifolia*), *Ajuga* Variegated Lemon Thyme

#### Shade

Native violets (*Viola hederacea*, *V. betonicifolia*), pennyroyal (*Mentha pulegium*), *Ajuga reptans*.

To start the herb lawn, remove all weeds in the area to be planted, and plant the herbs about 20 cm apart, preferably in spring. Cover the soil with a fine mulch, keep the plants well watered, and don't walk on the lawn for at least two months until the plants are established. In the right conditions, the herbs will form a dense mat, which you can walk over without causing too much damage.

The lawn will need regular maintenance and watering throughout summer to keep it looking fresh. Trim back the plants after flowering, and use an organic fertiliser as needed.

### Formal Herb Gardens

Herbs can really look great in a formal garden. Traditionally, formal gardens are laid out in a symmetrically balanced geometric pattern on the



ground.

Sissinghurst herb garden, UK

How to develop a formal herb garden:

1. Choose a site. Ideally choose a relatively flat piece of ground. If your garden is steep, you may be able to terrace an area. It doesn't need to be large - a garden as little as 3 or 4 metres wide can look stunning if the right plants are chosen.
2. Decide on the shape (usually a circle or square, or rectangle), then mark it out carefully on the ground. (Sprinkle some lime to mark the outline of the shape.)
3. Decide on a central axis that will divide the garden in two equal halves and mark that out as a path (ie. the line running down the centre), or even just a line through one large garden bed. Decide on any other major lines such as paths, hedges etc, and duplicate mirror images on both sides of the central axis.
4. Define the boundaries (with hedging, walls, edging tiles etc).
5. Plan your plantings – the plants should be identical amounts, heights) on either side of the central axis.



(type,

Wisely herb garden, UK

### Planting hints

- Think about the colours and textures of the plants you choose, and put plants beside each other to create visual contrasts.
- Think about the vigour of the plants, and put plants beside each other that have similar rates of growth, to prevent competition.

### **Growing Lavender as a Standard**

A standard plant is one that is trained to grow as a ball on a stick. They are expensive to buy at the nursery but, with a little patience, you can grow one yourself.

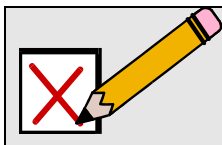
- Buy a small plant at the nursery, preferably in a 5 cm or 7.5 cm pot. Make sure the main growing tip is undamaged.
- Plant it in a larger pot and tie it to a strong cane to keep the stem straight.
- Pinch back the side-shoots as they appear, to encourage a single strong shoot.
- Repot, fertilise, etc. until the plant has reached the desired height. This may take a couple of years.
- Allow the leading shoot to produce several pairs of leaves, then pinch out the growing tip.
- Pinch out the tips of the new shoots that grow when they reach about 15 cm in length to encourage a bushy head to form.
- Keep pinching out the tips to maintain a dense, well-shaped ball, and rub out any shoots that appear lower down on the main stem.



### **SET READING**

Read the following chapters from *Growing and Using Vegetables and Herbs* before attempting Self-Assessment Test 4:

- Chapter 2, Designing Edible Gardens



#### **SELF ASSESSMENT**

Perform the self-assessment test titled 'Test 4'.

If you find yourself getting the answers wrong, go over the notes from this lesson again and then repeat this test until your answers are correct.

### **SET TASK**

1. Prepare a site for a new vegetable garden, or revamp an existing patch. If you have limited space, you may choose to prepare a container garden.

To prepare the site, follow the directions outlined in this course and in John Mason's book, *Growing and Using Herbs and Vegetables*.

When you dig the site, think about the size and layout of the beds, soil preparation techniques, the varieties you will use, and appropriate planting techniques.

2. Plant out your seeds or seedlings into the prepared garden. Take notes of germination rates, flowering, fruiting, problems etc.