

ECO-GARDENING

BY BARBARA BOWMAR

Eco-gardening, green gardening and IPM are all terms being used to describe gardening practices that are in harmony with nature. The purpose of this fact sheet is to look at Eco-gardening practices during the gardening cycle from the establishment of a new garden through planting and maintenance and on to the preparation for winter and the next season. It will also look at the inter-relationship of practices on insects, birds, butterflies and water usage.

PREPARATION OF A NEW GARDEN SITE

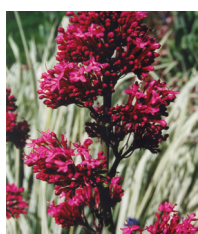
Preparation of a new garden can begin a year before you want to plant. There are several possible methods that can be used to prepare and enrich your soil.

On a previously unused piece of land, green cover crops such as fall rye will help to hold the soil down and add nitrogen to your soil once you have tilled the ground. Another method is to cover the soil with 60 cm (2 ft.) of straw which will prevent weeds from growing, keep the soil moist and provide organic matter that can be dug into the soil when you are ready to start your garden.

A method of reclaiming an area that is full of weeds or grass is to mow the area as short as possible, soak the ground well and cover it with 1 cm (0.5 in.) of thick overlapping layers of wet newspaper or cardboard. Then cover with 8–15 cm (3–6 in.) of manure or compost – whatever you would be adding to the garden bed before you plant it. Be sure to mark spots that have persistent weeds like quack grass or bindweed so you can check that they have been killed off before you plant. In the Interior and on sandy soil you will need to ensure that the material is kept wet. After a period of one year, you will find that the weeds and grass have rotted and that you have good usable ground underneath.

ADDING ORGANIC MATERIAL TO THE SOIL

Healthy soil is a mix of mineral particles, organic matter, water, air, micro-organisms and small creatures such as earthworms. The more organic matter you add, the better able your soil is to support both the life forms and the plants in your garden. Over a period of time, organic matter adds important micronutrients to the soil and improves the soil's ability to retain and release moisture. Gardeners need to be patient while they wait to observe benefits from these soil amendments. Adding organic matter year after year will produce healthy and active soil.



Front cover:
Centranthus ruber. Attractive to butterflies and beneficial insects.
PHOTO:
Vic Bentley

The following is a list of items that can enhance your soil while avoiding the use of manufactured chemical fertilizers:

- Compost
- Treated sewage sludge such as Ogogrow or Nature's Gold (Do not use these on any plants that you will eat)
- Well-rotted manure
- Straw
- Organic additives sold at your garden center
- Compost tea
- Worm castings.

NOTE: Peat moss is a non-renewable resource and an expensive soil amendment which can be very hard to re-wet once it dries out.

SELECTING PLANTS

Selecting healthy plants is important. Consider native plants that do well in your particular area. Select plants that are right for the conditions in your garden. Some plants are prone to disease and others readily attract pests. Avoid potential problems in your garden by selecting plants that are pest- and disease-resistant. Attending to these criteria will reduce your costs and labor in the garden.

BIODIVERSITY

Encourage biodiversity and reduce the incidence of pests and diseases by planting a wide variety of plants. For example, replacing lawns with tough, but attractive, groundcovers will increase the diversity of your home garden. The more variety you have, the greater the number of species of birds, butterflies and beneficial insects that will be attracted to your garden. Native plants are particularly attractive to birds, butterflies and beneficial insects.

Butterflies need sunlight, a garden free from insecticides that could harm the larvae or adults, and access to water and nectar which they find in plants with flat flowers like daisies and yarrow. Growing plants that bloom at different times will help to ensure that butterflies have food throughout the season.

Suggested shrubs and perennials to attract butterflies include:

- *Buddleia davidii*
- *Centranthus ruber*
- *Echinacea purpurea*
- *Lavendula angustifolia* 'Hidcote'
- *Liatris*
- *Monarda didyma*
- *Salvia officinalis*
- *Sedum* spp.
- *Syringa* spp.
- *Coreopsis* spp.
- *Thymus vulgaris*

Birds do a masterful job of eating harmful insects in our gardens. Birds also need insects as food and we have to leave some for them and provide water, other food and suitable nesting places and shelter in our garden.

Plants that produce seeds and berries which are good sources of food for birds include:

- Trees such as birches (*Betula* spp.), dogwoods (*Cornus* spp.), spruces (*Picea* spp.), pines (*Pinus* spp.)
- Shrubs such as serviceberries (*Amelanchier* spp.), roses (*Rosa* spp.)
- Vines such as honeysuckle (*Lonicera*) and grapes (*Vitis* spp.)

Hummingbirds are attracted to tubular flowers in bright red, orange and yellow.

Examples include *Heuchera* (coral bells) and *Penstemon*.



Buddleia davidii 'Variegata' PHOTO: Vic Bentley

MAINTENANCE

Mulching

Mulch holds moisture, moderates soil temperature, fertilizes plants in a natural way and greatly reduces weed problems. It is the best thing you can do for your plants and the most labor-saving thing you can do for yourself! Use a 5–10 cm (2–4 in.) layer on smaller plants and up to 15 cm (6 in.) on trees and shrubs. A thick layer of mulch means healthy roots and healthy soil underneath. Because mulch decomposes and becomes soil, it will need to be replenished every year. It cannot be said too often: mulch, mulch, mulch.

Suggestions for mulches include:

- Bark chips or wood chips (do not use in fire-prone areas)
- Grass clippings applied in thin layers (only if the grass has not been sprayed with pesticides or herbicides)
- Groundcovers (See the Fact Sheet "Groundcovers".)
- Fall leaves and stems from plants that have been shredded with your lawn mower
- Compost
- Manures
- Composted sewage sludge products such as Ogogrow, Nature's Gold (Do not use these on any plants that you will eat)
- Living mulches (groundcovers) are preferable in fire-prone areas.

Compost

Compost is an important and essential component of the eco-wise garden. Building compost piles and bins, building worm bins for kitchen waste and the composting processes are described in the Fact Sheet "Composting".

Fertilizer

Do not use chemical fertilizers as they damage soil and soil micro-organisms leading to a dependence on chemicals. They cause fast weak growth which makes plants susceptible to pests and diseases. And, they leach into our water system to pollute our drinking water and damage aquatic habitats. An organic mulch will slowly add nutrients as your plants need them, which leads to strong healthy plants.

Pests and diseases

One of the most important factors in the prevention of pests and diseases involves sanitation. Remove infected leaves and plant material and put into the garbage, not your compost. Avoid leaving places for eggs and spores to overwinter. These practices will help to protect your garden from many pests and diseases. The Fact Sheet "Pest and Disease Management" describes methods of dealing with pests and suggests using means that are both effective and the least toxic.

Being willing to accept some insect pests in our gardens ensures that the beneficials have a meal when they come along. We need to leave food to attract the lace wings, lady birds and parasitic wasps and we need to ensure that we are using control methods that will not harm the beneficials and will allow them to survive.

Pruning

When planting, be sure to space for mature size. This will greatly reduce pruning chores.

MOISTURE RETENTION

Most gardeners understand that we can no longer consider water to be an unlimited and abundant resource. A thorough discussion of watering practices and moisture retention is contained in the Fact Sheet "Water-wise gardening".



Syringa spp.
PHOTO: Janet Sawatsky

PREPARING THE GARDEN FOR WINTER

Cut down grasses and sturdy perennials in the spring. By leaving foliage you provide a place for beneficial insects to overwinter and provide food and shelter for birds. It also makes for a more interesting winter garden. When you do cut down your grasses, tie a bungee cord around the grass before you use your electric hedge trimmer. You will save yourself the problem of picking up dozens of stray pieces of grass.

In the fall and any time in the growing season, clean up leaves from your roses and any stems or leaves from plants that are showing signs of disease such as mildew. Do not put these materials in your compost. Dispose of them in the garbage.

Other spent stems and leaves from vegetables can be pulled and left on the ground over the winter or shredded and composted. You can spread 60 cm (2 ft.) of hay over your garden to keep out weeds and help to warm the soil during the winter. Leaves and stems that have been chopped by your lawn mower or other chipper are another good source for winter cover.

Plant cover crops such as fall rye in empty garden beds. This crop needs to be turned under in the spring. It will decompose enough to make the plot ready for planting within a few weeks and you will have what is called green manure.

SEED SAVING

Those new to eco-gardening may be interested in saving seed for planting in the following year. Gardeners should be aware that seeds of hybrids are not viable for germination. Increasingly, vegetable seeds advertised in catalogues as well as those sold in local nurseries have been genetically modified so the seed gathered at the end of season from your plants will not germinate the following year. Most seed companies are owned by a few multinational corporations that are no longer carrying the diversity of varieties that were available a short time ago. It is essential that we try to preserve diversity so that there will always be plants that are resistant to a new pest or disease.



Seedy Saturdays, which are held in many communities, are an excellent source of heritage and heirloom seeds. Here you can buy them directly from the small independent seed companies who protect and grow these endangered varieties.

Rye straw with seeds intact was applied to this plot. Some of the rye seeds have germinated. The rye grew until frost killed the tops and then it re-grew in the spring before the ground was tilled. PHOTO: R. McCoubrey.

Acknowledgement

Thanks to Gwen Steele, natural garden educator, Kelowna, BC and Bob McCoubrey, certified organic farmer, Lake Country, BC who have shared their wisdom and knowledge on eco-gardening with the author over several years and thus have contributed to this Fact Sheet.

REFERENCES

- Cox, J. (1998). 100 Great Garden Ideas. Rodale Press, Emmaus PA, USA.
- Ellis, B. and F. Bradley, Editors. (1996). The Organic Gardener's Handbook of Natural Insect and Disease Control. Rodale Press, Emmaus, PA, USA.
- Stout, R. and R. Clemence (1971). The Ruth Stout No-Work Garden Book. Rodale Press, Emmaus, PA, USA.
- Longwood Gardens Inc. (2007). Retrieved February 15, 2008 from www.longwoodgardens.org/EducationalResources.html.



Master Gardeners Association of British Columbia

The Master Gardeners Association of British Columbia is a volunteer organization providing information about gardening and horticulture to the community and educating people about environmentally responsible gardening practices.

Through its chapters in Vancouver, Victoria, Summerland, Vancouver Island and Prince George, the MGABC

- runs a series of clinics at garden centers and major garden events
- presents gardening programmes in schools, hospitals and seniors' homes
- works with community groups on various "greening" projects.

Most of the 700 Master Gardeners in BC are enthusiastic amateurs; some are experienced professionals — all of us have a passion for gardening. We share this passion with the public and promote the enjoyment of gardening through a variety of volunteer projects and activities.

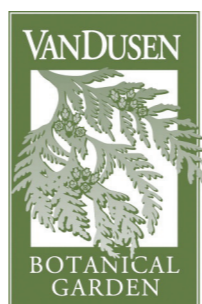
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Contact us at:
Master Gardeners, 5251 Oak Street
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A Master Gardener Fact Sheet