

AUTUMN **GreenTimes** Sustainable gardening to safeguard the future

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GREEN NEWS

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Green News

Compiled by Gaby Bartai

EDITOR'S WELCOME

Welcome to our exciting autumn supplement packed with seasonal goodies to help you garden with the environment in mind.

It's the time of year for a big clear-up in the garden and although it is good to leave some debris and plant seed heads for the birds and insects, there is still much that can be composted. Follow our guide to composting on page 10 to help you create a most wonderful soil conditioner. If you don't have the material to make a lot of compost but want to improve your soil

then turn to page 8 to discover how green manures can be beneficial to your plot.

As winter approaches it is always a good time to start feeding the birds to help them survive the cold months ahead. Turn to page 16 for some tips on this topic – your feathered friends will also enjoy a bath so why not consider installing a pond. On page 18 we explain the benefits of having a wildlife pond in your garden and lots of tips on creating one.

Happy autumn plotting!



News in brief

SIX MORE CITIES TO GROW THEIR OWN AS THE BIG DIG GOES NATIONWIDE

May saw the launch of The Big Dig, a nationwide project to get people growing food together. Run by Sustain: the alliance for better food and farming, and funded by the Cabinet Office's Social Action Fund, it will involve community growing projects across England, beginning in six cities: Brighton, Coventry, London, Manchester, Middlesbrough and Sheffield. The project builds on the success of Capital Growth, which has helped over 60,000 people get involved in new community food-growing spaces in London.

As well as working with established community growing spaces, The Big Dig will develop new sites and aim to attract volunteers from communities which traditionally do not volunteer. Mark Fishpool of Middlesbrough Environment City says: "We've seen a huge increase in interest in food growing in our town. Being part of this project will allow us to reach out to people who want to get growing for the first time."

CHEAP EATS FOR STUDENTS WHO GET GROWING

The National Union of Students is set to create a network of 18 food-growing projects on university and college campuses across the country, thanks to more than £260,000 in funding from Local Food. The plan is for half of the produce to feed the student gardeners, with the remainder being sold to help sustain the project. Each site will have either a polytunnel or a greenhouse to prolong the growing season and allow for the cultivation of exotic produce for the benefit of international students.

LADYBIRDS DO BETTER ON ORGANIC DIET

A new study, co-authored by the Natural Environmental Research Council, has found that ladybird larvae fed on aphids from organic crops are more likely to survive than those fed on bugs from crops grown with conventional fertilisers. The research, published in Biological Control, demonstrates that ladybird larvae fed on organically raised aphids stand a 10% greater chance of making it to adulthood.

Gardeners think big in wildlife contest

Six winners have been announced from more than 400 diverse entries to the Big Wildlife Garden competition, run by the RHS and The Wildlife Trusts and funded by DEFRA. One of the winning gardens began simply as somewhere to enjoy a glass of wine, another came about because a local community wanted to make something lovely out of a rubbish-strewn corner of an allotment, while the business winner wanted to provide staff with a lunchtime refuge.

Thierry Suzanne won the small residential category for the four-year transformation of his London garden into a haven for wildlife, while Terry Oliver in West Sussex won the large residential category for developing a garden that works for wildlife but is also safe for his young grandchildren. Other categories in the competition were new residential, communities, business and educational.

"The Big Wildlife Garden competition was set up to encourage everyone to carry out some wildlife gardening on their doorstep," says Morag Shuaib of The Wildlife Trusts. "No space is too small to be transformed."



Framfield Allotments in London, winner of the communities category. Picture: Cairis Hickey.



Terry Oliver's West Sussex garden won the large residential category. Picture: Miles Davies.



Thierry Suzanne's winning garden. Picture: Cairis Hickey.



FEED BRISTOL HEADS FOR FIRST HARVEST

July saw the official opening of Avon Wildlife Trust's new Feed Bristol project at Parkside Nurseries in Stapleton. The Lord Mayor of Bristol and pupils from Begbrook and Glenfronme Schools planted vegetables and cut a ribbon to declare the site open for community use.

Avon Wildlife Trust spent the previous five months transforming seven acres of disused smallholdings into a site for nature-friendly food growing. Project officer Matt Cracknell says: "We have erected two buildings, renovated old polytunnels and prepared raised beds, a sunburst garden and other special growing areas so we can involve people of all ages and abilities in food growing. Despite the dreadful summer, we are just about ready to harvest our first crops."

The project has been made possible with £300,000 from the Big Lottery's Local Food Fund and Bristol Green Capital and support from Bristol City Council. There are regular work days for schools and community groups and drop-in sessions for individual volunteers. 500 people are already involved in some way, and everyone involved gets a share of the harvest.

www.avonwildlifetrust.org.uk/people/feedbristol/feedbristol.html

Food production should be sustainable, say MPs

New national planning guidelines should be introduced to ensure that communities have access to land on which to grow their own produce, according to a recent report on sustainable food by the Commons Environmental Audit Committee. Joan Walley MP, chairman of the committee, says: "Our food system is failing. Obesity and diet-related illness is on the increase, fewer young people are being taught how to cook or grow food, and advertisers are targeting kids with junk food ads on the internet. The Government is understandably sceptical about anything that seems like nanny-statism, but the evidence is clear – intervention is needed."

The committee's report warns that the current Government has no overarching food strategy in place, and that its focus on 'sustainable intensification' – the need to produce more and more food from the same area of land – risks ignoring the social and health implications of how we grow, trade and consume food in the UK. The MPs believe that the emphasis should be on 'sustainable', and that policy should take account of the social and environmental impacts of the food system, including retaining space for small-scale production and local food networks. Their report also recommends that the Government should consider including information about sustainability on food labelling.

Homeless but not gardenless: hostels in East Anglia get veg plots

Homeless and socially excluded people across Norfolk and Suffolk will get the chance to grow their own food thanks to over £85,000 in funding from Local Food. A £57.5 million programme supported by the Big Lottery Fund, this provides funding for projects working to make local food more accessible and affordable to communities.

St John's Housing Trust will be using the money to set up five communal

vegetable patches at its hostels across East Anglia, providing the opportunity for homeless people to grow their own food, learn about healthy eating, build their confidence and develop new skills. Participants will learn about food production and the area's agricultural heritage, with visits to local farms and potential opportunities for volunteering and work placements.



Scottish community gardeners get funding support

Community gardening in Scotland is to enjoy a £600,000 windfall after Environment Minister Stewart Stevenson announced funding to boost the grow your own movement. "With the hunger for allotments currently outstripping availability in Scotland, the Scottish Government is fully committed to supporting people who are interested in grow your own initiatives and projects," he said. The Central Scotland Green Network Development Fund will distribute most of the money directly to community growing projects over the next few years, with other grants going to gardening charities including the Federation of City Farms and Gardens and therapeutic gardening charity Trellis.

Londoners aim for 2012 plot target

Capital Growth, the campaign to create 2012 new community food-growing spaces in London by the end of 2012, had clocked up 1778 spaces by the beginning of August, and it is calling on all new food-growing projects in London to sign up and be counted. Joining is free and provides benefits including

discounted training and materials, advice and help in finding volunteers. To be eligible, projects must be in one of the 33 Greater London boroughs, be open to at least five people and be at least five square metres in size, and have started since January 2009. www.capitalgrowth.org



Utophia Mobile Garden in Lewisham is just one of 1778 new community growing spaces so far registered in London...



...and Space 127: St Luke's Centre is another. Register now and reap the benefits.

New list offers pick of plants for pollinators

Bees and other pollinating insects are set to benefit from a new guide produced by the RHS. Following last year's list of pollinator-friendly cultivated plants, the charity has now launched a list of over 200 wildflowers useful as nectar or pollen sources for insects, many of which are suitable for planting in cultivated areas. The cultivated plants list has also been extended to include more than 400 plants. Both lists can be found at www.rhs.org.uk/Gardening/Sustainable-gardening/Plants-for-pollinators "Gardens are now increasingly recognised as important

environments for maintaining biodiversity," says RHS director of horticulture Jim Gardiner. "By planting a broad diversity of plants, gardeners can do a lot to encourage pollinating insects which, in turn, will bring other forms of wildlife into their gardens." Key RHS advice is to opt for planting schemes that provide flowers through the seasons, and to avoid plants with double or multi-petalled flowers, as the extra petals often replace the pollen-producing parts of the flower and may make the nectar inaccessible.



RHS director of horticulture Jim Gardiner, gardening writer and presenter Sarah Raven and RHS principal entomologist Andrew Halstead launch the new Plants for Pollinators list at the Hampton Court Palace Flower Show.

More Britons growing their own

Nearly a third of British adults now grow their own food, and one in six have started growing their own in the last four years, according to a recent poll commissioned by the City of

London. 51% of those surveyed said they would consider growing their own fruit, vegetables and herbs – or growing more of them – if food prices rise further.



£2m jubilee scheme will get young Londoners growing

May saw the launch of Growing Localities, a new £2 million grants programme to mark the Queen's Diamond Jubilee. Delivered by the City Bridge Trust, Growing Localities will promote the use of London's green spaces and encourage people to grow their own food through community involvement and volunteering.

The programme also aims to provide horticultural work training for young unemployed people and those with special needs. Lord Mayor David Wootton says: "Our research shows that Britain is getting back to growing food again and this initiative is to help groups that help people do this."



TV chef and owner of Manoir aux Quat' Saisons, Raymond Blanc, and actress Joanna Lumley mark the launch of Growing Localities.

Autumn bears its fruits

Autumn is the time for harvesting bountiful baskets of home-grown goodies while nature is preparing for the long winter ahead. Our gardens and veg patches are starting to wind down for the cold months to come and the end of the season of plenty is marked by much folklore and celebration.

What's with Hallowe'en?

This annual celebration has now turned into an excuse for selling plenty of merchandise, but its origins are much older and more complex and may have roots in Christian and pagan festivals. At the end of October a pagan Celtic festival called Samhain marked the end of the season of the sun (summer) and the beginning of the season of darkness (winter). The Celts believed that evil spirits came with the long dark nights and the barrier between the living and spirit worlds was weakest at the end of October. However, way back in 835 AD at a similar time in the year the Roman Catholic Church made November 1 a day to celebrate the saints. Another name for it is All Hallow's Day – the day after All Hallows' Eve (Hallowe'en).



Beyond the garden gate

FORAY FOR FUNGI

Mushrooms and toadstools can be found all year round but they are particularly prevalent during autumn when the weather is warm and often more damp.

DEER RUTTING

If you have a deer park near you this is the time when you can witness the stags fighting off rivals for the rights to mate with the females. There are many different species from the small muntjac and roe deer which you may hear barking to the roar of the large red deer, our largest land mammal.



BIRDS FLOCKING

Many birds flock together now as they prepare to migrate or simply to roost. One to watch out for are the starling murmurations as they are so called. This is when literally thousands of starlings fly together creating swirling black clouds in the autumn evening sky. They tend to do this at dusk before they roost and it is an amazing sight. Why they do it is still a mystery but it is thought they are protecting themselves from predatory attacks by birds of prey. Migratory geese arrive on our coasts having flown from their Arctic breeding grounds.

SPIDERS' WEBS

As they glisten in the morning dew it reveals just how many creatures we share our environment with.

EVENTS FOR YOUR DIARY



September 7-9: Ludlow Food Festival, Ludlow, Shropshire. More than 160 small independent food and drink producers from the Marches, the England-Wales border country. Takes place Ludlow Castle and around the town.

September 29-30: Malvern Autumn Show, Three Counties Showground, Malvern, Worcs. Ticket hotline 01684 584924

October 20-21: Apple Festival at the Home of the National Fruit Collections at Brogdale in Kent tel 01795 536250 www.brogdalecollections.co.uk

October 23-24: RHS London Shades of Autumn, RHS Horticultural Halls, Greycoat Street and Vincent Square, London SW1P 2PE

SPECIAL DAY

October 4 – St Francis Day

It was on this day swallows were supposed to fly to the bottom of ponds to hibernate through the winter. In the days before migration was understood this was how people understood the disappearance of swallows. It may have been seeing swallows skimming the water for insects that started this folklore.

APPLE DAY

October 21 – This day was officially made apple day in 1990 by Common Ground to create an annual celebration of this popular fruit and highlight the disappearance of so many of our heritage varieties. The day was adopted countrywide with apple days and events now running all through October in all four corners of the UK. www.commonground.org.uk



Look after wildlife

Time to help some of our wildlife survive the winter. There are small measures you can take that will make a big difference in your garden.

› DON'T TIDY UP TOO MUCH

There is a temptation to dead-head and cut back herbaceous perennials or seed heads of sunflowers and artichokes. Leave them intact to not only provide food for birds and other creatures but also homes for insects. On a frosty or snowy morning you will also appreciate the lovely sculptural shapes your untended plants can make.

› PUT OUT BIRD FOOD

You may have been doing this all year round but if not then now is a good time to start. Birds will appreciate the extra food now and through the winter. If possible install a bird bath or make one out of a shallow tray. Birds need to have regular baths to keep their feathers in good condition, plus if you can keep the water ice free when the weather turns frosty the birds will appreciate it for drinking water. Keep it clean and change the water regularly.



› MAKE A LOG PILE

If you are cutting back shrubs or trees then find a corner of the garden behind the shed maybe or beneath a hedge and make a pile of twigs and logs. The insects including ladybirds will appreciate a dry shelter for the winter. You don't need to buy expensive insect homes you can make them out of twigs, straw stuffed pots and old tiles or broken clay pots. Insects are not fussy, as long as it is dry and sheltered from the elements they will make use of it.

› BUILD A HEDGEHOG HOME

There are lots of ideas on the internet for making a hedgehog box or you could buy one and place in the garden. Providing a home for a hedgehog will reap rewards when your hedgehog and its family eat lots of slugs in your garden!

Why leaves change colour

Chlorophyll makes leaves green which helps in photosynthesis, the process by which plants make their own food. In autumn the cooler temperatures and reducing day length triggers the chlorophyll to break down revealing other pigments in the leaf. The most vibrant colours are created when you have a dry summer followed by dry sunny days with cold autumn nights.

Why not try and visit Westonbirt, near Tetbury in Gloucestershire, the National Arboretum, to see some truly fantastic autumn colours.



Harvest from the hedgerows

There are several wild crops you can look out for now. Obviously blackberries but also, as the autumn takes hold, sloes. The blackthorn produces small black fruits that have a grey bloom on the skin. These can't be eaten raw but do make a great sloe gin.

SLOE GIN

This recipe gives a sweet, thick drink that goes particularly well in the hip flask when out on a winter's day. Make it in October, it will be just about ready for Christmas. There are no exact quantities – it is rare to be able to predict a specific quantity. Pick what you can.

METHOD

- ▶ If the sloes are fresh and ripe, lay them out on a metal tray and freeze them overnight to split the skins. This makes it easier to get the juices out.
- ▶ Pack the sloes lightly into a large glass jar or demijohn. Add enough caster sugar to come one third of the way up the sloes and a small wineglass of brandy to each pint of sloes. Top up with gin, add an airlock and shake lightly each day for the first few days to ensure that the sugar is dissolved. Keep in a cool, dark place for two months at least.
- ▶ When ready, strain off the liquid through a piece of muslin into nice

clear glass bottles. Label and keep somewhere safe for you to enjoy later. Reserve the sloes, if you like. They can be used to add to cider for a winter fruit cup or popped a handful at a time into mulled wine or game stews. Lovely.

OTHER HEDGEROW TREATS

Hazel or cobnut, crab apples, elderberries.



Dealing with gluts

At the end of the growing season you can suddenly get a glut of fruit and vegetables and as all gardeners appreciate there are only so many beans you can eat! Giving some away and preserving them are the only options apart from returning the excess to the compost heap.

FREEZING PRODUCE

Most vegetables are best blanched before freezing. This is simply placing them in boiling water for 1-3 minutes depending on the vegetable. They are then removed and plunged into ice cold water to stop cooking. Ideally then freeze the vegetables on a non-stick baking tray and once frozen tip into freezer bags and mark with the date. Most veg can be frozen but some subjects are not ideal including lettuce, cucumber, chicory, endive, radishes and Jerusalem artichokes.

SAND BOXES

Boxes of sand are good for storing beetroot, turnips or carrots in. You need a wooden box, preferably, although a polystyrene box would work too. The sides need to be about 20cm (8in) deep. Line the base with newspaper and then add some sand or compost. This is best if it is slightly damp not bone dry as it can draw moisture out of the vegetables if it is really dry. Lay a single layer of the veg in the box, place close together with a tiny gap. Add more compost or sand and then another layer. Finally add more compost or sand over the top layer of vegetables. Keep the box in a cool, dry garage, shed or cellar.

SACKS

Potatoes, onions and carrots could be stored in sacks but ideally these should be made of hessian or paper to allow good air movement. Never store in plastic bags.



CLAMPS

Many root vegetables can be left in the ground and dug up as and when needed but if you want to sow green manures or just dig over the soil then you may want to lift the crop and store in a clamp. The most simple clamp is literally a shallow depression dug in the ground with a 5cm (2in) layer of straw placed inside. A single layer of root veg such as carrots, Jerusalem artichokes or parsnips are placed on the straw, more straw is added, and then another layer and then soil is used to cover over the straw to make a heaped soil mound. Open up one side of the clamp to remove veg and cover again afterwards.

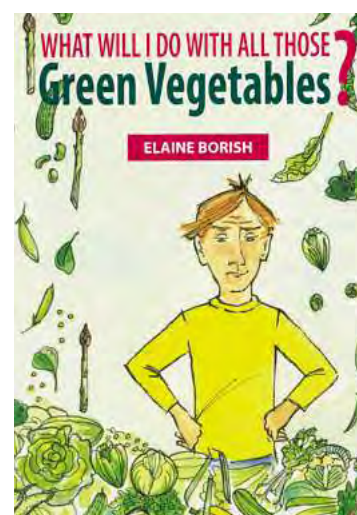


CROPS TO HARVEST THIS AUTUMN

Carrots + Salad leaves + Lettuce + Sweetcorn (Last pickings usually Sept) + Potatoes + Spinach + Radish, Tomatoes (up until early Oct in a greenhouse) + Peppers + Parsnip + Summer squashes and late Oct – pumpkins + butternut and winter squash + Runner and French beans (up to end Sept/early Oct) + Apples and pears + Salsify + Scorzonera + Swede + Radish + Globe artichokes + Aubergines + Beetroot + Leaf beet + Spring onions + Bulb onions (from store) + Peas + Swiss chard + Cauliflower + Turnip + Celery + Celeriac + Onions + Cabbages + Brussels sprouts

RECIPE BOOK TO HELP YOU USE YOUR PRODUCE

There is a great little book, What Will I Do with All Those Courgettes, by Elaine Borish, that provided some unique and inspirational recipes for courgettes. Now the same author has also brought out What Will I do with All Those Green Vegetables which includes more than 160 recipes for other vegetables, helping you to be a bit more adventurous with using up your excess produce.



5 COPIES TO WIN

We have 5 books to give away. Just send your name and address on the back of a postcard to: Recipe Book Competition, Kitchen Garden, Mortons Media Centre, Morton Way, Horncastle, Lincolnshire LN9 6JR.

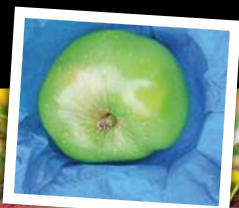
Closing date for entries is October 5. Names will be drawn out of a hat after this date and each winner will receive a copy of What Will I Do with All Those Green Vegetables.

LEARN TO STORE

If you have a lot of fruit and veg to store and want more tips on the best way to do this then get your hands on a book called How to Store Your Garden Produce by Piers Warren, it is a great reference book describing techniques such as root clamps, drying, vacuum packing, salting and more usual methods such as pickling and bottling. It is a really handy guide as it lists pretty much every fruit and veg you could grow and how to store it. A definite must for the keen kitchen gardener with excess produce to deal with. How to Store Your Garden Produce is published by Green Books. ISBN: 978 1 900322 17 1

TOP TIP: STORING YOUR APPLES

Wrap each apple in a little newspaper and place in a cardboard box or crate and place in a cool, dark garage or shed.



GREEN MANURE SEEDS & SOWING ADVICE

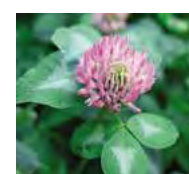
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www.GreenManure.co.uk

SOWSEEDS

The garden bath

Words: Laura Cooke

In the age of showers, bathing is something of a lost art. Herbal baths are an excellent way to unwind, especially when made with fresh, aromatic leaves

When it came to bathing, the Romans were experts. They relaxed in lavender and rose-scented water and were no strangers to exfoliating tools and saunas. More than just a method of getting clean, a trip to the thermal spa was a social event.

Today there is an array of foams and gels available to make bathing more pleasurable, but they often

include strong detergents and preservatives. Since this means the water cannot be easily recycled, it can seem rather decadent to enjoy a deep, regular soak.

However, swapping your usual products for herbal potions means that your grey water (the name given to used water from the bath or basin) can be put to use for watering the garden. Your plants might object to a dousing with bath

foam, but are unlikely to mind herb-infused water. The water from a purely herbal bath is perfectly safe for most ornamentals and vegetables – just be sure that you've added nothing stronger than a mild, natural biodegradable soap. It is best, however, to avoid reusing water to which you've added salts, fizzy bombs or foams, as this may give your plants an unpleasant shock.



Make a bath bag

These herbal sachets are quick and easy, costing almost nothing to make. They can be filled with any combination of herbs and aromatic petals, but I chose thyme and rosemary – a classic choice for aches, pains and stress. Provided you haven't used anything stronger than biodegradable organic soap alongside your bath bag, you can

still make use of the water on your garden afterwards.

To make the sachets, you'll need a sharp knife, a length of ribbon, fresh herbs from the garden, a few drops of essential oil and some cheesecloth. I used muslin lemon wraps (usually used for cooking) to make mine, as they proved to be the perfect size.



1

Finely snip rosemary and thyme leaves before lightly crushing with the back of a knife – this helps to release the fragrance. The more you crush the herbs, the more fragrance will be released.



2

Place the mixture in the centre of the muslin and draw up around the herbs to form a sachet. Fasten with a length of ribbon to secure.



3

Adding a few drops of essential oil will give the bag extra potency. Choose a matching scent (such as lavender essential oil with fresh lavender flowers) or use a complementary aroma. I chose patchouli, as it seemed to complement the rugged rosemary and thyme scent perfectly.



4

Attach the bag to the tap using the ribbon, and give it a blast with hot water to release the fragrance. Alternatively, steep the bag in the bath for 10 minutes before getting in – and enjoy!

How to make...

BATH BOMBS

When you think about it, it's actually rather strange for a gardener to use bath products with artificial rose or lavender bouquets when they're likely to have the real thing growing outside. Fresh petals and herbs have an aroma that far outstrips that of synthesised fragrance, so going back to basics doesn't mean deprivation! In fact, there is little more luxurious than a petal-strewn bath. In recent years, fizzy bath bombs have become extremely popular. On the high street, a single 'bomb' can cost up to £3. If fizz is your thing, make a loose version from citric acid, bicarbonate of soda and a few of your own home-grown herbs. Citric

acid softens hard water, and when combined with bicarbonate of soda produces the characteristic fizz. Use one part citric acid to three parts sodium bicarbonate.

BATH SALTS

Bath salts have become unfashionable, but I simply can't fathom why. They are cost-effective, long-lasting and make a great vehicle for aromatic plants and oils. Add dry crushed herbs and petals to a jar of Epsom salts and store in a dry, dark spot to encourage the granules to absorb the scent. When a small handful of the mixture is added to the bath, the aroma will be released. A ribbon, a smart label and a few tiny

dried rosebuds will turn your jar of bath salts into an attractive gift for friends and family.

SOAP

Traditional cold-pressed soap requires careful measurements and weeks of curing, making it expensive and time-consuming to produce at home. Luckily, it's easy to cheat with a pre-made, organic base. This technique is known as melt-and-pour soap-making, and is a useful way to enjoy your summer-dried herbs in the winter. Warm the solid base until it becomes liquid, add your chosen petals and herbs before pouring the whole mixture into a mould to set.

Plants for the bath

BASIL

Aside from its pleasant clove-like scent, basil has a number of beneficial properties. Use to relieve stress and soothe aches and pains.

LEMON BALM

The citrus-like aroma of this herb makes a zingy, invigorating bath when added to a herb sachet. Combine with mint for a real wake-me-up bath on grey mornings.

SAGE

A powerful antiseptic, sage-infused water makes an effective gargle for sore throats.

ROSE

Useful for treating dry, sensitive or mature skin, crushed rose petals also add a touch of luxury to the bath.

CHAMOMILE

A familiar ingredient in many skin and haircare preparations, chamomile is renowned for its gentle cleansing effect. A rinse made from infused flowers is useful for brightening blonde hair and relieving an itchy scalp.

ROSEMARY

Rosemary is used in many commercial bath products to relax tense, aching muscles and relieve tiredness.

TOP TIPS

- › A rich source of minerals, Epsom salts have been used for centuries to heal the skin and treat complaints such as rheumatism and arthritis. Add one or two handfuls per bath.
- › Dried herbs are useful in home-made bath preparations which need to stay dry until use, such as salts and solid bath bombs.



SUPPLIERS

- › For organic soap and bath bomb bases, visit www.bathbomb.biz or phone 01256 474889.
- › The lemon wraps used in my bath bag project can be purchased from www.justpreserving.co.uk call 01603 722120 for details.

Rosemary is good for relieving tiredness and relaxing aching muscles.

Going green to feed your soil

Poor soils generally mean poor crops, but improving your soil fertility can be done in so many ways and without the need to source and move barrowloads of heavy manure. Green manures are one such method and deserve to be more popular, as *KG* editor **Steve Off** explains

If you've ever gazed with envy on your neighbour's veg and wondered why your crops don't have the get up and go that theirs have, the chances are that the answer lies in the soil; if your soil is lacking in nutrients, your plants are less likely to thrive. Yet there are lots of ways to add nutrients and put back what successive crops and the rain have taken away. The most obvious of course is to add tons of manure or well-rotted compost, but there is another way that, together with other methods, can help keep your crops growing to their full potential – green manures.

The term green manure is usually applied to a crop that is grown specifically for the good of the soil –

to be ploughed back into the ground, rather than being eaten. However, all plants, in effect, 'hold' nutrients as they use them to build leaves, stems and roots, subsequently releasing them as they rot. Therefore the term can also be applied to plants such as weeds which are ploughed back in rather than simply being removed and composted. Other materials such as grass clippings and comfrey leaves used as a mulch can also be called green manures.

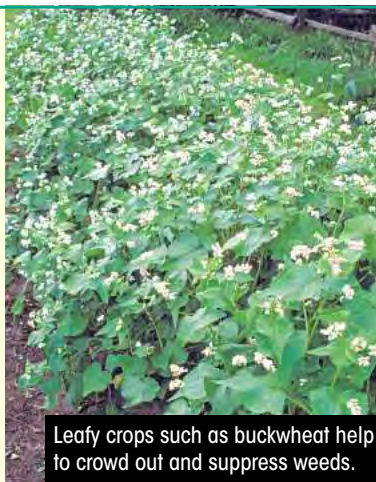
The various green manure crops, and indeed any weeds (or wild plants), vary greatly in the nutrients they hold to release later and in the amount of bulk they introduce to the soil when dug in and hence the amount of soil-improving humus they release.



Green manures are ideal for incorporating into your crop rotation to feed your soil.

Not just a fertiliser

Green manures do more than just feed the soil – they also act like a living mulch to protect it whenever a lack of food crops threatens to allow the rain to beat down directly on to the surface and wash valuable nutrients out. Deep-rooted kinds can also bring nutrients up from deep within the soil, making them available to shallow-rooted crops. The same roots can help to break up poor, compacted soils and the growth suppresses competing weeds.



Leafy crops such as buckwheat help to crowd out and suppress weeds.



Deep rooted manures such as winter tares help to break up heavy soils.

FOLLOW THE RULES

There are just a few rules to follow when using green manures to get the best results:

- Plants should be dug in before they seed and this applies to green manures specifically applied or to weeds that appear voluntarily.
- They should be dug in before they become too well established or woody.
- Not all are hardy so you need to choose the right type for overwintering.
- Some green manures are in the same group as some crop species – for example field beans (legumes) and mustard (brassic) and so need to be fitted into your crop rotation plans where appropriate.
- Plants from the legume or bean family have a hidden benefit – thanks mainly to naturally occurring nitrogen-fixing nodules on the roots, they take nitrogen from the air and store it to be released once the nodules rot down. These crops might be preferable where a following one, such as leafy cabbages, would benefit most. Some leafy plants such as the rye grasses and mustard also add nitrogen by virtue of their leafy bulk.

A walk through the green manures

PEA FAMILY (LEGUMES)

As mentioned above, these are the 'nitrogen fixers' and will add nitrogen as well as other nutrients to your soil once dug in. They include alfalfa, field beans, clover (including trefoil), fenugreek, lupins, winter tares.



Red clover helps to fix nitrogen from the air.

CABBAGE FAMILY (BRASSICAS)

This group is fast-growing and includes mustard and radish. They add nitrogen and other nutrients as they rot down.



Mustard adds bulk and nitrogen to the soil.

OTHERS

These plants belong to plant families that you are unlikely to be growing as food crops and so can fit anywhere into standard crop rotations. This group includes the ryegrasses (grazing and rye), phacelia and buckwheat.



Attractive phacelia fits into any crop rotation.

DID YOU KNOW?

- Caliente mustard can be used to fumigate the soil and to deter pests such as wireworm by virtue of the gases it releases as it breaks down.
- Water well and continue to water during dry spells until the crop has established. Fast-growing weeds should be removed until the green manure has established – once it has however, this should not be necessary. Birds are likely to be a problem when sowing certain crops such as the grasses so be prepared to cover newly sown areas to protect them at first.



Green manures to sow in autumn

These are perhaps the most popular of the green manures since they can be used at a time when we most need to protect empty patches in the plot and when we are least likely to need the ground for anything else. Manure crops that can be sown now include field beans, red, white and crimson clovers, mustard, phacelia and radish.

HOW TO SOW

This couldn't be easier. Simply clear debris from any previous crops and also remove any flowering weeds, or weeds which are likely to flower before the green manure will be incorporated. Cultivate the surface of the soil lightly and rake to form a seed bed, but preparation need not be as thorough as when sowing edible crops.

Broadcast sow smaller seeds such as those of grazing rye and radish lightly over the surface of the prepared soil and lightly rake in. Larger seeds such as field beans can be sown in seed drills or scattered and dibbed in where they fall. Field beans should be sown approximately 10cm (4in) apart and if sowing in rows allow 20cm (8in) between each row.



Sow in rows or broadcast. Cover with netting against foraging birds.

Grazing rye can be broadcast sown and lightly raked in.

DIGGING IN

Plants should soon establish and grow away, stopping once the temperatures fall. However, in a mild season, you may find that they continue to grow and should be incorporated before becoming too large and woody. If all goes well however, you should not need to worry about them until late

winter/spring when you are ready to begin preparations for sowing.

In most cases growth can simply be turned in with a fork when winter digging or cut down with a strimmer and left on the surface for the worms to incorporate. Alternatively the bed can be covered with a light-excluding mulch for three to four weeks to kill the growth which is then incorporated.



When things get out of hand

Despite your best efforts, if you find you haven't had time to incorporate your green manures and they have become a little woody, don't despair. If the ground is fairly settled after the winter rains and you have an old rotary lawnmower, you could run over the bed with the mower on its highest setting to chop them up thoroughly. Alternatively put them through a shredder before composting.

DID YOU KNOW?

As green manures rot down in the soil, the bacteria responsible for much of the breakdown remove nitrogen to feed the process and the rotting vegetation can also inhibit the germination of seeds. Allow three to four weeks between incorporating the crop and sowing your crops.

SUPPLIERS

Most seed suppliers sell a small range of green manures. See page 101 for full contact details.

- › The Organic Gardening Catalogue: 01932 253666; www.organiccatalogue.com
- › D T Brown: 0845 3710532; www.dtbrownseeds.co.uk
- › Sowgreenmanure.co.uk; www.greenmanure.co.uk

The **HOTBIN** is no ordinary composting bin. It **HOT** composts all year round to **RECYCLE** your food and garden **WASTE** faster.

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Compost made easy

It's at the heart of organic gardening – and there's nothing capable of causing new organic gardeners more heartache. **Gaby Bartai** goes back to basics. Pictures: Dave Bevan

If you believe some books, composting is child's play. If you believe others, it's only a question of how soon things go unpleasantly and malodorously wrong. The truth lies, as the truth always does, somewhere in the middle.

Pile up organic waste in your garden and you will, one fine day, get something more or less resembling compost. All material of living origin eventually returns to the soil. But, if you want a quality product inside a reasonable timescale, you'll need to contribute more to the process. How much more is up to you. Composting can be kept very simple, or it can become an absorbing hobby.

Here we'll stay with first principles and restrict ourselves to foolproof, low-maintenance techniques for 'cold' composting. On pages 12 and 13, we'll move up a gear and talk about 'hot' composting.

WHAT NOT TO COMPOST (FOR NOW)

Anything organic – in the sense of being of living origin – can be composted, but whether it should be composted in your garden depends on how experienced a composter you are. The low-maintenance approach is to aim for a 'cold' composting process. This will produce good-quality compost, lets you add material to your compost heap a bit at a time, and requires relatively little attention. The downsides are that the process is slower and, more importantly, that high-risk materials need to be excluded. Once you are confident of being able to achieve a hot enough compost heap to destroy anything pathogenic or pernicious, you can compost anything organic you want to, and we'll come back to how to do that on the following pages. In a cold compost heap there are things you would be wise to exclude.

- › Cooked food waste, meat, fish and bones: these will attract rats, foxes and cats, and should only be composted in a vermin-proof enclosed bin.
- › Perennial weeds which regenerate from their roots, and weeds that have gone to seed: weed seeds and perennial weed roots will survive a cold composting process, leading to an almighty weed problem where you use the finished compost. The best solution is to 'drown' the weeds first in a bucket of water; a few weeks underwater and they will be comprehensively dead. Alternatively, put them into a knotted black plastic sack and leave it in a sunny place, or, in summer, lay them out in the sun until they are completely desiccated. They can then safely be added to the compost heap.
- › Diseased plant material: you can only be sure of killing plant pathogens in a very hot compost heap, so if plant material shows signs of disease, it is better bagged and binned, or consigned to a hot, swift bonfire.
- › Green waste from gardens likely to have been treated with chemicals: while all but the most purist of organic gardeners will welcome donations of green waste from other gardens, organic or not, avoid green waste you know to have been treated with pesticides or weedkillers, which will affect the microbial life of your compost heap.
- › Cat and dog waste: this can contain parasitic worms which can cause blindness, so should be bagged and binned. 'Humanure' composting is another area which should be left to very experienced composters (urine, on the other hand, is a safe compost ingredient).
- › Woody prunings: these break down very slowly, and will emerge from a cold compost heap virtually unaltered. In a big enough garden, the simplest strategy is to pile up woody prunings in an out of the way corner to provide a wildlife habitat while they break down in their own good time. Alternatively, pre-process prunings (and other tough waste such as brassica stalks) through a shredder, which could be hired or borrowed, if your garden isn't big enough to justify the purchase. Shredded prunings break down much more quickly and become a valuable 'brown' addition to the compost heap.

WHAT TO COMPOST

Potential compost materials fall, broadly, into two categories: nitrogen-rich and carbon-rich, and if there's a secret to composting, it's getting the balance right. Do that, and you will, without question, produce compost.

Most sources talk in terms of 'greens' – the nitrogen-rich ingredients – and 'browns' – the carbon-rich ingredients. Alternatively, you can think in terms of 'wet' and 'dry' or 'soft' and 'hard' ingredients. Nitrogen-rich materials include kitchen waste – vegetable and fruit trimmings, teabags and coffee grounds, spent cut flowers and so on – grass clippings, weeds, soft prunings, comfrey, nettles, seaweed, animal manure and human urine. Carbon-rich materials include tougher prunings, dead leaves, tough plant stems, hay, straw, paper, cardboard and sawdust.



The key to successful composting is a variety of ingredients.



Why compost?

There are two main reasons for composting. One is to produce the perfect plant food and soil conditioner. This, as well as benefiting our gardens, reduces our need for bought composts, the production and transportation of which have an environmental cost, and especially for peat, the extraction of which destroys irreplaceable habitats. But the second reason is to reduce our contribution to landfill and our need for energy-intensive waste collection and processing. A third to two-thirds



of the average, unregenerate dustbin contains compostable waste. If this is sent to landfill its nutrients are lost; worse, it produces methane, a greenhouse gas 20 times more potent than carbon dioxide. A quarter of the UK's methane emissions are estimated to come from rotting organic matter in landfill sites.

Composting moves your household closer to the model 'closed' organic system in which everything is recycled and nothing is wasted. The existing stock of nutrients in your garden is endlessly recycled between soil and plants, and your garden's need for imported nutrients is reduced – potentially to zero.



Where to put your compost bin

Almost everyone puts their compost bin out of sight at the far end of the garden, in the corner where nothing will grow. The catch is that composting needs a degree of warmth, so the dark dank corner behind the shed is less than ideal. There's also the fact that the further you have to walk to reach the bin, the less you will use it. You are much better to put your bin in a sunny spot, and as near to the house as aesthetics permit.

Put your bin straight on to the soil – not on hard surfacing – so that it can drain readily and so that worms and other composting creatures can easily get into (and out of) the bin.



COMPOST CONTAINERS

As the phrase 'compost heap' implies, the idea of a container for your compost is a refinement; compost can and will be produced if you simply pile your ingredients up in a heap. There are two problems, though. One is aesthetics; an open compost heap is going to be an eyesore. The second is that compost loses heat and moisture through open surfaces, and less heat and less moisture mean less efficient composting. Some sort of container is therefore a good idea. The traditional 'organic' compost bin is a splendidly Heath Robinson affair, made from anything from pallets to old doors. There are also a range of smart wooden compost bins on the market. Or there are the Dalek-style plastic composters supplied by many local councils at a subsidised

rate. If you have a big garden and will be composting a significant quantity of green waste, you'll do better with a pair of 'New Zealand' square wooden bins.

COMPOST CRITERIA

Five things are needed for successful composting: a mixture of ingredients with the right overall ratio of carbon to nitrogen, air, moisture, warmth, and myriad animals and micro-organisms which between them break down organic waste and turn it into compost. Get the first four things right, and the necessary animals and micro-organisms will arrive of their own accord – though you can do your bit to help things move along by adding the occasional shovelful of good-quality topsoil or mature compost to a new heap.

The composting recipe

One of the best pieces of composting advice I've heard comes from the inimitable Centre for Alternative Technology (CAT): think of a cheese sandwich, the bread representing carbon-rich ingredients, while nitrogen-rich ingredients are the cheese. Allowing for the widely varying carbon:nitrogen ratios of the various ingredients, a balanced compost heap needs roughly two parts 'bread' to one part 'cheese' – the perfect sandwich.

Nitrogen-rich ingredients fuel the composting process, so their presence is essential to make things happen within an acceptable timescale. Too much nitrogen-rich material, however, and you'll end up not with compost but with unspeakable black sludge; nitrogen-rich ingredients collapse quickly, excluding air from the heap. A higher proportion of carbon-rich materials, which have more structural strength, will stop the

heap from collapsing and preserve its air spaces, but because carbon-rich materials tend to break down very slowly, the result can be coarse, bitty compost.

CAT squared this circle by developing its now-famous 'high-fibre' composting method, which adds household waste paper – cardboard and paper packets, tissues, toilet roll inners, egg boxes and the like – to the usual compost mix. Paper and cardboard have good structural strength but break down relatively quickly; their presence ensures adequate air within the heap, and they soak up excess moisture from the 'green' ingredients.

Magazines and newspapers are also fine in small quantities (the inks used no longer contain toxic heavy metals), as long as the pages are scrunched up rather than being added in flat wads – but any quantity of flat paper should really be recycled rather than composted.



Compost bins are easily improvised – but the results are not to everyone's taste.



Composting completes the nutrient cycle in your garden.

With a cold compost heap, organic waste can be added gradually, as it becomes available. Make sure that you add a variety of ingredients to your bin, and that you don't overwhelm it with a large quantity of a single material. The quickest way to upset a compost heap is to dump a fortnight's worth of grass mowings on it; being very high in nitrogen, they will rapidly rot into black sludge. You need to add them in layers of no more than 3in (7cm), interleaved with layers of a drier material. Equally, if you are adding large quantities of a dry material, interleave it with fresh green waste.

Air is to a large extent supplied by the presence of drier materials which, being less dense, introduce air spaces into the heap. A layer of woody prunings at the base of a compost heap will allow air to get underneath it. A stagnant heap which smells bad is probably anaerobic (lacking in oxygen); remaking the heap, adding in some drier ingredients, should put things right.

Moisture is also dealt with if you get the balance of ingredients right, the wetter nitrogenous materials balancing the drier carbon-rich ones. In an open heap, however, rainfall and evaporation are additional factors. In very dry weather, you may need to water the heap; in wet weather, a waterproof cover will prevent waterlogging. If the ingredients themselves are too wet or too dry, you need to redress the balance. The heap needs to be kept moist but not wet – 'like a well wrung-out sponge' is the usual instruction. If it is too dry, composting will slow down; too wet, and air will be excluded, making the heap anaerobic.

The final factor is warmth; composting will happen faster if you site your bin somewhere sunny, and it will slow down in winter. Covering an open bin with a piece of old carpet in

the autumn will provide a useful degree of insulation.

If you add a large volume of material to a compost heap in one go, and you get the carbon:nitrogen balance right, it will become very hot. For experienced composters, this is something to aim for. For 'cold' composters, it can be regarded as a bonus – it will greatly speed the process – but achieving a hot heap is not essential unless you are composting high-risk ingredients. A cold heap will still produce good-quality compost, albeit more slowly.

Within six months to a year of starting a compost heap, the bottom layers should have been converted into useable compost. Turning the contents of the bin with a fork two or three times will keep things moving and shift less well composted material from the edges to the middle. This is not essential, however. With a cold composting process you can simply 'feed and forget'. Once the lower layers of the heap look like compost, empty your bin and sieve out the finished compost from the bits you can still identify. Return these to the bin, and bag up the finished compost ready for use.

Whatever your approach the crucial thing to remember is that composting is what happens naturally. All the gardener need do is help the process along.

FIND OUT MORE

- › www.recyclenow.com/home_composting
- › *The Little Book of Compost* by Allan Shepherd (Collins, 2007)
- › *Compost* by Ken Thompson (Dorling Kindersley, 2007)
- › *Composting – An Easy Household Guide* by Nicky Scott (Green Books, 2005)

TROUBLESHOOTING

- › **TOO WET?**
Add a waterproof cover.
- › **TOO DRY?**
Apply a watering can, or remove the cover and let the rain in for a few days.
- › **COLLAPSING INTO BLACK SLUDGE?**
Too much nitrogen-rich material. Remake the heap, adding layers of a carbon-rich material.
- › **DOING NOTHING?**
Probably not enough nitrogen-rich material. Remake the heap, adding 3in (7cm) layers of a nitrogen-rich material, or water it with urine.
- › **INACTIVE OVER WINTER?**
All compost heaps slow down in winter, but you can keep things ticking over by turning the heap, adding whatever nitrogen-rich material you have available, or watering it with urine. Add an insulating layer of carpet in autumn.
- › **BAD SMELL?**
Mix more dry material into the heap to introduce more air and reduce its moisture content. Cover the heap if waterlogging is a problem.
- › **RATS?**
Stop adding anything which might qualify as rat food, and set traps. If the problem is persistent, you may have to use a vermin-proof bin for your kitchen waste, and put only garden waste onto an open heap.
- › **FRUIT FLIES?**
These are most likely in a lidded bin. They are harmless but can be annoying. Leave the lid off to encourage predatory beetles to move in, and bury any fruit waste rather than adding it to the top of the heap.

Some like it hot

It's time to move things up a gear, says **Gaby Bartai**: get to grips with hot composting, and open up your compost bin to a heap of new ingredients.

On pages 10 and 11, we went back to basics on 'cold' composting. While not foolproof – nothing actually is – this is the low-maintenance option, and with a little care respectable results are pretty much guaranteed.

However, cold composting has its limitations. One is the time it takes; you are looking at six months to a year to produce useable compost. This is fine in a small, low-maintenance garden, but a more productive garden needs all the fertility it can get, and the sooner the better. Also, if your garden is producing large quantities of green waste, a quick turnover in the compost department will free up space for growing.

The second limitation of cold composting is the number of things it is wise to exclude. By the time you've left out cooked food waste, meat, fish and bones, perennial weeds that can regenerate from their roots, annual weeds that have gone to seed, diseased plant material, cat and dog waste, and woody prunings, you

potentially have a heap of non-compostable material bigger than your compost heap. In a model 'closed' organic system, all organic waste should be composted, thereby continuously recycling the garden's stock of nutrients between plants and soil. Besides, none of the alternative methods of disposal are good ones. Bonfires waste precious fertility as well as being ecologically beyond the pale, and the 'bag and bin' option should be reserved for very small quantities of pathogenic material. Municipal composting systems provide a valuable service for those unable to compost all of their green waste, but it doesn't make financial or ecological sense to transport green waste out of your garden, and then transport bagged compost back into it, if you are able to compost it on site.

Be aware, though, that hot composting is not for everyone. It also has its limitations, the main one being that it's more of a one-off project than an ongoing process. You can add material to a cold compost

heap a little at a time, as it becomes available, which fits in with the normal functioning of a garden. A hot compost heap needs to be built in one go, meaning that you need to have a large volume of material available at once. While drier ingredients can be stockpiled ahead of the day you are planning to build the heap, more volatile 'green' ingredients need to be collected on the day, otherwise they will start to rot down on their own ahead of time, producing not compost but black sludge.

Hot compost heaps are therefore more suitable for big gardens. In a small garden, you are unlikely to have enough green waste available at one time, meaning that you would need to import much of the material. This can be done – plenty of organic gardeners collect, for instance, other gardeners' prunings and grass mowings, greengrocers' waste and stable manure for their compost heaps – but you might well feel that the potential workload is getting out of hand.

TOP TIP:

Hot compost heaps require time and energy. Collecting up large quantities of green waste and building a heap in a day is physically demanding, and the heap then needs to be rebuilt twice or more over the following couple of weeks. You need to have time to attend to the heap, and at its convenience rather than yours. If you have minutes rather than hours at a time to devote to your garden, you are better to stick to cold composting, a 'feed and forget' system which can be left to its own devices more or less indefinitely.



The easiest way of turning a compost heap is to work with a pair of bins, one full and one empty. (Picture: Dave Bevan)



Stockpile your ingredients, so you can build the heap in one go. (Picture: Dave Bevan)



Hot heaps need to be large to retain the heat - about a cubic square metre is ideal but the bigger the better – this picture shows hot heaps on an industrial scale!

THE SIZE ISSUE

Don't let anyone tell you that size doesn't matter. It is possible that the compost in a small Dalek-style bin will heat up significantly, but if it happens it will be more by luck than judgment.

To be sure of achieving a hot heap, you need two things: the right balance of materials, air and moisture, and a sufficient mass of material assembled in one go. The necessary minimum is 1m by 1m by 1.2m (39 by 39 by 47in), which in practice means that if you are using a bin it needs to be the square 'New Zealand' type. Most commercially available New Zealand bins are in fact not big enough (the model most widely available in the popular organic catalogues is only 91cm by 75cm (36 by 36 by 30in), and I've seen some that are smaller), so your best option is probably to make your own. This doesn't require sophisticated woodworking skills; four pallets roped or nailed together will serve admirably. The bin needs to be open at the bottom, and the sides should be well insulated (fill the gaps in pallets with

polystyrene slabs, cardboard, straw or something similar).

Ideally, you need two bins. The hot composting process demands that you turn the heap twice (or more); while you could fork everything out of your bin and then put it back again, it is much simpler to work with a pair of bins, one full and one empty, moving the contents between the two. Turning the heap is also made much easier if you design your bins so that the front sections can be removed.

You can make hot compost in an open heap, as long as it is large enough and you cover the top and sides with plastic sheeting and carpet to ensure good insulation. If you are composting a very large quantity of material in an open heap, extend it sideways into the shape of a Toblerone to make what is known as a windrow.

HOW A HOT HEAP WORKS

As soon as you assemble a compost heap, psychrophilic bacteria get to work. These operate in low temperatures – around 13C (55F). They give off small amounts of



Compost tumblers minimise the physical demands of hot composting. (Picture: Dave Bevan)

COMPOST TUMBLERS

There's no getting away from the fact that hot composting is hard work. A slightly easier option is to invest in a compost tumbler. This dispenses with the need to turn your compost heap; instead, you rotate the drum of the tumbler. Compost tumblers can cope with a mixture of ingredients high in 'greens' – some are specifically advertised as being good for composting grass cuttings – because the tumbling process continually aerates the materials.

Beware, however, of marketing pictures showing a slight young woman turning the tumbler with a flick of the wrist while smiling at the camera. Turning a full tumbler does require physical strength. Tumblers are also more expensive than traditional compost bins, with prices going up to £400. Some models claim to make compost in 14 days – but this is a best-case scenario, dependent on warm weather, the perfect location and the optimum mix of materials.

Hot composting step by step

› Gather together sufficient materials to create a heap at least 1m by 1m by 1.2m (39 by 39 by 47in), ensuring a variety of materials and a good mix of softer, wetter 'green' ingredients and harder, drier 'browns'. For a hot heap you need rather more greens than browns – advice varies, but the consensus is two parts greens to one part browns.



Chop up tough ingredients like brassica stalks to give the microbes more surface area to attack. (Pictures: Dave Bevan)



A hot compost heap can cope with a fair quantity of grass cuttings – as long as you have sufficient dry ingredients to balance them with.

› Chop up tough materials such as brassica stalks and prunings with a spade, or process them through a shredder.

› Assemble the heap, alternating 'green' and 'brown' layers. Start with a layer of sparse, dry material such as woody prunings to let air get beneath the heap. Aim for 5cm (2in) layers of brown materials, and 10cm (4in) layers of green ones. Adding the occasional layer of compost from a mature heap will do no harm. Water any layer that looks dry, and firm the contents down gently as you go.

› Cover the top of the heap with a sheet of plastic and a piece of carpet; with an open heap, cover the sides as well.

› Within 24 to 48 hours the inside of the heap should be hot to the touch; steam should rise when you remove the covers. This indicates a frantic rate of microbial activity.

› If the heap fails to heat up, the mixture of materials is not right, the heap is too dry, or it is lacking in air. Remake the heap, adding in more green materials and watering the brown layers if it seems dry and inert, or more dry materials if it seems too dense and wet.

› Monitor the heap to determine when it starts to cool down. The failsafe method is to use a compost thermometer. Then turn the heap into your second bin, or rebuild it, to reintroduce air and move material from the edges to the middle. If parts of the heap seem dry, water them.

› Leave the heap to heat up again. When it cools again, turn it a second time. It probably won't heat up a third time. By this point, the green materials will have been largely used up, and the composters will be turning their attention to the tougher ingredients.

› Leave the heap to mature. Larger creatures will move in to convert the raw compost into textbook brown friable stuff; this second phase also ensures the complete destruction of any pathogens. This phase is slower, and may take anything from a few weeks to a few months, depending on the time of year.



Once finished compost should be dark, friable, have an agreeable earthy smell and be pleasant to handle.

COMPOST FORAGING

If you want to build a hot heap and your garden can't provide you with sufficient materials in one go, scavenge the neighbourhood for ingredients. But, as Allan Shepherd points out in *The Little Book of Composting*, if you are using the car it's important to combine foraging trips with journeys you were going to make anyway. "Otherwise you're just converting petrol into fertility, exactly what you're trying to avoid by not using chemical fertilisers."

IMPORTED POSSIBILITIES INCLUDE:

- › Nettles and other.
- › Fallen leaves from parks and roadsides.
- › Manure from stables or farms.
- › Seaweed from above the tideline on beaches.
- › Waste fruit and veg from the greengrocer.
- › Hair from the hairdresser.



Finished compost, ready for use. (Picture: Dave Bevan)

- › Grass clippings and prunings from neighbouring gardens.
- › Waste paper and cardboard from neighbouring households.

energy, raising the temperature of the heap enough for the mesophiles – mid-temperature bacteria that thrive at around 20 to 30C (68-86F) – to start work. These bacteria are efficient composters, and if this is the highest temperature your heap reaches, they will complete the process on their own.

If conditions are exactly right, however, the increasingly frenetic activity of the mesophiles will raise the temperature still further, allowing the thermophiles to get in on the action. These bacteria operate at temperatures of 40 to 70C (104-158F), and the heat they create can get so intense that you can boil an egg in the middle of the heap. The mesophilic bacteria survive this phase as heat-resistant spores, while larger creatures will move to the cooler outer parts of the heap.

The thermophiles can sustain this temperature for only three to five

days. After that, the bacteria in the centre of the heap start to run out of air and nutrients, their activity decreases, and the temperature drops. You need to turn the heap, introducing more air and mixing in the less composted material from the outer parts of the heap, to produce a second rise in temperature. Different methods suggest turning the heap one, two or even three more times, possibly producing further spikes in temperature. Once the heat drops for the final time, microbial activity decreases and other, larger organisms take over the composting process.

Depending on who you read, hot composting can take from 12 days to four months. I have to say that the 12-day option is entirely outside my experience, but the authority I'm quoting here is Allan Shepherd of the Centre for Alternative Technology, whose composting expertise is second to none. In *The Little Book of Compost*, he suggests a proactive method whereby you turn the heap on days three, six and nine; on day 12, he says, the compost should be ready for use (though it may need a few more days and one more turn). Most other authorities suggest a less ambitious timescale, turning the heap twice in response to it cooling down, and leaving the cooled heap for a couple of months to allow the compost to mature.

It makes sense to start a hot compost heap in summer or early autumn, since this is when you'll have a large volume of garden waste to process. It is also when the temperature and weather conditions are most favourable; composting, like all biological reactions, happens faster in warmer temperatures.



Wooden bins can be insulated with polystyrene. (Picture: Dave Bevan)

All included

The beauty of a hot heap is that virtually all organic matter can be included. You can throw away the rule book on most of the categories of material that are best excluded from a cold compost heap.

COOKED FOOD WASTE, MEAT, FISH AND BONES

You can add all kitchen scraps to a hot heap, as long as you bury them in the middle of the heap. Don't put them on the top, where rats are likely to get to them before the composting bacteria do.

PERENNIAL WEEDS

Perennial weeds which regenerate from their roots, and weeds that have gone to seed.

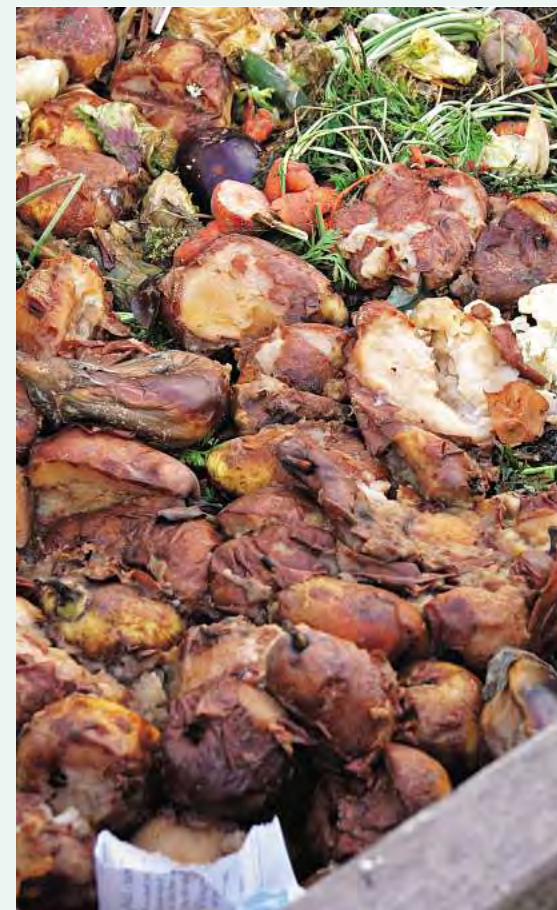
Weed seeds and roots will be destroyed in a very hot heap. If, however, you are stockpiling pernicious weeds ahead of building a hot heap it's as well to hedge your bets by keeping them in a sealed plastic bag or a bucket of water.

WOODY PRUNINGS

Small quantities of twiggy prunings can be included in a hot heap, particularly as a bottom layer. Larger quantities should be shredded first to give the bacteria more surface area to attack. Very large quantities should be composted separately.

DISEASED PLANT MATERIAL

A really hot heap can reach 70C (158F), which will see off any plant pathogen. Even at 40C (104F), most pathogens will be killed within a month or so. To ensure that none at all survive, it's important to give your heap time to mature. It is after the initial hot phase that the 'hygienisers' get to work. These bacteria attack pathogens, and some have an antibiotic effect. Be sure not to leave diseased plant material lying around ahead of building a hot heap, however; bag it up meantime.



Cooked food waste can be included in the centre of a hot compost heap. (Picture: Dave Bevan)

CAT, DOG AND HUMAN WASTE

Cat and dog faeces, compostable cat litter, used tissues, and compostable nappies and sanitary towels can safely be included in the centre of a hot heap once you are confident of achieving seriously high temperatures every time. Nappies and sanitary towels need to be labelled 'compostable', not just 'biodegradable'.

Reuse your rubbish

Gardeners have always been great recyclers. Here we have some useful tips on reusing everyday 'rubbish' on your plot to help you grow better crops

Gardeners tend to accumulate a lot of things that 'may come in handy one day', but often never get around to using them. So if you need some inspiration to help you find a use for all those useful bits, read on.

USEFUL RECYCLABLES

- › Wooden pallets: Use to make cold frames, panels, boxes, raised beds.
- › Packing tape: Use as a 'humming line' across your brassicas to keep pigeons off. Weave it into baskets or support for peas and beans.
- › CDs: Good bird scarers
- › Plastic bottles: 101 uses for these including mini cloches, slug trap if you lay the bottle on its side. Cut in half lengthways and you have a compost scoop.
- › Pipes: If you ever get offered some plastic pipe, grab it as it has many uses. Block off the end and drill small holes along its length. Insert a hosepipe in the other end and lay the pipe along your veg rows to gently water the whole length. Small pipes can be pushed in beside newly planted trees to help water get right to the roots. Use lengths of pipe in big pots or buckets that you are growing exhibition crops in to make sure the water gets right to the base.
- › Old tights: Make great filters for downpipes into water butts. Also fill with comfrey or nettles and soak in a bucket of water to make a liquid feed. Use the tights for ties, they are soft and strong.
- › Old umbrellas or hanging baskets: Useful cloche structures to cover tender plants. Simply lay fleece over them.
- › Fruit net bags: Useful to store shallots and onions in.
- › Compost bags: These are usually black on the inside and so make good container or basket liners.

PACK IN THE POLYSTYRENE

Polystyrene packaging is great for reducing the amount of compost you need in big pots. This is useful if growing salad leaves, short rooted veg, herbs and strawberries in big containers. Break up and put in the bottom of your large containers before filling with compost. The polystyrene also helps with drainage and will insulate the base of the pots in cooler months.



CARDBOARD MULCH

Cardboard makes a fabulous mulch around newly planted fruit trees or beside rows of vegetables to prevent weed growth and water loss. Cardboard can also be used to line a pathway on your allotment but to secure, cover with wood chippings. These can be home-made if you have a shredder.

CDS TO SCARE THE CROWS

CDs are given away freely with newspapers and magazines these days so unwanted ones can be strung up across your plot to deter pigeons. Here some bottles have been filled with buttons to add a rattle in higher winds for an even greater deterrent.



PLUMBING PIPE FRAMES

Plastic pipe used for plumbing is fabulous for creating frames over which you can put fleece or Enviromesh. If you are lucky enough to know a plumber, ask for some offcuts otherwise you could buy by the metre from builders' merchants.



MAKE A BOTTLE BIRD SCARER

This bird scarer is made using a plastic bottle on a cane with some plastic 'wings' inserted into the sides to catch the wind and make the bottle twist and rattle.



PLASTIC BOTTLE LABELS

Plastic packaging makes great plant labels. They take seconds to cut out and can be made to whatever size you want.

WHERE TO SOURCE MATERIALS

- › Wood chippings can sometimes be obtained from local tree surgeons.
- › Try your local council for supplies of green waste compost. Some can provide a source.
- › Wooden crates from roofing contractors make great compost bins. You could also try your local builders' merchant for these.
- › Pallets can sometimes be obtained from furniture stores or again builders' merchants who don't have them recycled.
- › Building contractors may have left over sand and gravel.
- › Pipes from building contractors or landscaping companies can make good containers or the narrow blue plastic pipes make good cloche hoops.

GREAT RECYCLING WEBSITES

- › Freecycle (www.freecycle.org) A great website which you can use to exchange items for free. Most areas in the country have local groups so you don't always have to travel far. Good source of all sorts of items from wood to containers. You do need to log on and join using a password.
- › eBay (www.ebay.co.uk) The world famous auction site that you can find just about anything on. A good place to source any landscaping materials or old barrels to store water.

TOP TIP

How about this painted ballcock on your plot to scare birds? Probably scare off vandals as well with those piercing eyes.



POT SINKS

Old plastic pots can be used sunk into the ground next to crops or inbetween plants in growing bags. You simply pour water into the pots and the water is directed more to the roots rather than running off away from the plants and being wasted.



SLUG COLLAR

Another use for a cut-down plastic bottle, this time a slug collar around a brassica plant. The bottle is simply cut into sections and the top edge is cut in a jagged edge and folded down. The piece is placed over the young plant to be protected.



BATH TIME

Not pretty but practical. An old bath makes a good reservoir for rainwater. Sink it into the ground beside a shed and put guttering around the roof to catch the water. This one needs to be made safer by placing a plank inside to allow creatures to get out should they fall in!





Cotoneaster berries are perennially popular with the birds.



Calendula is an excellent pollen provider – as if you needed any more reasons to include it in an organic garden!



A chiffchaff, one of the many garden visitors that depend on a healthy insect population.

Food for friends

Winter is approaching and a well-stocked garden and bird table can be a lifeline for our feathered friends explains **Jenny Steel**

In the depths of winter the three crucial elements of wildlife gardening – shelter, water and food – come into their own.

A sheltered garden is a warm garden (within reason), and I'm sure anyone who has moved from suburbia to the windswept wilds of the countryside, as I have (or vice versa, as some of you will no doubt testify), knows the value of shelter. Water is also vital to wildlife, and the small barrel pond outside my window is constantly visited by blue tits, wrens and dunnocks and has to be regularly de-iced in the colder weather, such is its popularity as a watering hole.

And the third vital element in any wildlife garden – food – is constantly in demand. Today, sunflower seeds are disappearing at a rate of several per second from one feeder as finches, tits and nuthatches approach and take off in a flurry of activity reminiscent of the main runway at Heathrow. A peanut feeder sports an upside-down great spotted woodpecker hammering as though his life depended on it (which it probably does) and a mature *Cotoneaster horizontalis* is currently home to a couple of argumentative blackbirds squabbling over the berries, while another feeds on a windfall 'Bramley' apple.

Providing food for garden wildlife is paramount in the winter, and the view outside my window only reinforces how vital it is in a wildlife garden to provide food in as many forms as possible. Diversity is the key to attracting wildlife to your garden, and to providing a really good habitat – while much of our countryside becomes more and more impoverished.

The period between November and April is the hardest time of year for wildlife, yet it is also the time when many animals are preparing to breed. Birds and mammals have to find sufficient sustenance through the winter to be in good breeding condition in spring, and many insects, especially bumble-bees and early butterflies, will need a ready supply of food when leaving hibernation. We can provide two types of food – natural and supplementary. Both are important and have their advantages.

Providing natural food entails gardening thoughtfully with the requirements of local creatures always in mind. It means having nectar, pollen, berries and seeds in the garden, and it means growing plants upon which the food chain hinges. These are the plants that insects and other invertebrates feed upon – creatures which in their turn

provide food for animals higher up the food chain. We can look at these ideas one at a time.

Gardening thoughtfully is what all organic gardeners do, whether they wish to attract wildlife or not. We don't use the chemicals that harm our environment, and we take into account the natural rhythm of life outside our back door. But it also means gardening with our eyes open to the consequences of our actions. I am always saddened when I hear of gardeners taking out hedges, cutting down trees, or destroying an established garden in other ways, simply for a new look or a 'makeover'. No thought is given to the thousands of creatures for which that space was a home, especially the amphibians and invertebrates that depend on the shelter and the existing plants in an established garden.

It is possible to make changes in any garden without creating disturbance on a grand scale, and this approach can make the daunting jobs seem much easier. It is far more wildlife-friendly to carry out major changes a bit at a time. For example, cleaning out a pond is one job where the resident wildlife benefits from a 'softly softly' approach. Reducing the plant growth in a quarter of your pond



A relatively formal garden can still be packed with nectar plants – don't imagine that you have to go wild to please wildlife! Simple flowers are best however.



This young great tit needs a plentiful supply of insects if it is to survive.

every year, instead of tackling the whole thing in one go, means that aquatic creatures will still have somewhere to shelter. Take this approach to other large jobs and the small mammals, amphibians and invertebrates using your garden will benefit.

Growing berry- and seed-bearing plants for birds and mammals is something that is frequently mentioned in books and magazines as a tenet of wildlife-friendly gardening. But is it as simple as it sounds? The answer is probably no, especially where seeds are concerned.

There has been an explosion in the wood mouse population in my garden in the last year, and this has had some interesting consequences, from the very good (tawny owls and kestrels hunting daily – and nightly – over the long grass) to the rather less good (wholesale consumption of newly planted bulbs and the destruction of pots containing wild flower seeds). We can learn something from this.

My wood mice targeted the pots with the larger seeds, such as field scabious, teasel and greater knapweed, as these were going to provide the biggest meal. It follows, therefore, that leaving all seeds in our borders over the winter doesn't necessarily help wildlife that much. It pays to use common sense. Many plants, such as the mulleins, foxgloves and poppies, have tiny seeds, and in general birds and mammals would probably use more energy collecting and (in the case of mice and voles) storing these, than they gained from eating them.

The answer here may be to cut down seed-heads that you suspect to be of little value, but to leave those with large nutritious seeds. Where spent plants are not detracting from the appearance of a border, however, leave them anyway; the extra cover provided by the leaves and stems will be very beneficial.

The choice of berry-bearing plants is not straightforward either, as many berried shrubs have been bred with fruits that ripen very slowly, to prevent birds taking them early in the season. These may ripen eventually, but it is in late autumn and throughout the winter that berries come into their own as an important source of food for many bird and mammal species. If you are planting new shrubs and

would like to encourage birds as well as provide winter colour, choose plants with red berries as a general principle, rather than orange, yellow or white ones. There are always exceptions to these rules, however, and over time you will learn from your own experiences and observations which berries are taken by the birds and which are left alone.

Providing nectar and pollen for insects is pretty straightforward, and lists of suitable plants, both native and non-native, are now commonplace (see, for a start, www.wildlifetrusts.org where downloadable factsheets can be found). Again, use your own observations as a guide, as plants that produce good quantities of nectar in some gardens do less well in other conditions. It is important to get to know your own garden, and to learn where nectar plants will perform best.

The third way we can help our local wildlife to find natural food is to ensure that there is always a good supply of invertebrates around by growing the plants that these small creatures feed upon. These animals are at the bottom of the food chain and support everything higher up in one way or another. Although in this instance native is generally best, there are also plenty of non-native plants that are worth growing for this purpose.

Whether it is a direct link (your local robin feeding on small caterpillars) or an indirect one (a fox hunting for a shrew that has been feeding on slugs), the invertebrates and the plants they feed upon are the most important component of a wildlife garden. Looking after the soil in our gardens by using home-made compost will make sure the invertebrates are well looked after too.

Encouraging wildlife to our gardens is not just about their value to the organic ecosystems we are trying to create. Many wildlife gardeners that I speak to tell me that they also feel a desire to care for these animals, protect them and provide them with a good place to be. Maybe that is a rather sentimental view of what we are doing out in our gardens, but to me that doesn't matter. What matters is that whatever our motivation, the things that we do, especially providing food, really make a difference.

Supplementing nature

Although providing natural food is important, you can always augment what is naturally there, however good, with supplementary feeding. Most of us do feed the birds now, and many gardeners feed their hedgehogs, foxes, and even badgers and deer.

Foods like peanuts, sunflower hearts, nyger seeds and mixed seeds of all types can mean

the difference between life and death for some birds. The decline of hedgehogs in the UK (50% in 15 years) is known to be due at least in part to a lack of natural food, as insecticides destroy the invertebrates that they largely depend on, so supplying food for them will help their survival.

Sunflower seeds are disappearing at a rate of several per second from one feeder in a flurry of activity reminiscent of the main runway at Heathrow.



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In a larger pond, there's space for a whole range of aquatic species.

Water of life

Without water there would be no life... and in a garden without water there is relatively little wildlife. If you only do one thing for your garden wildlife, create a pond, says **Jenny Steel**

If someone told you that there was a wonderfully easy way to increase the amount of wildlife in your garden by a very large percentage, in terms of both quantity and biodiversity, you would probably be very keen to find out all about it.

This one simple change would not only bring birds and mammals you hadn't seen before to your garden, it would also tempt many new creatures to set up home and breed there. Well, there certainly is an easy way to make your garden an absolute wildlife paradise, and that is to create a wildlife pond.

Here we explore the importance of water to wildlife from every group – mammals, birds, amphibians, reptiles and invertebrates. The knock-on effect

of having all these extra creatures, especially the invertebrates, is tremendous. If swallows and martins, for instance, are seen only infrequently over your garden, the provision of water will soon provide insect food for them. Tiny creatures hatching from the water create a vital link in the food chain that will make your garden an important wildlife habitat.

Creating a large wildlife pond can be a major undertaking, and not all of us have sufficient space for a substantial pool, but here's the good news. Water of any sort will bring wildlife to your garden. I recently had two grey wagtails bobbing about in a tiny barrel pond outside my back door, searching for insects among the floating plants which

practically fill it up (and plants are a crucial part of any watery habitat you may be considering). They were so delighted with this tiny wetland that they now visit every day, perching on the roof of the house and paddling in the mini-pond on their way to and from who knows where. Other birds use this water for drinking and bathing, from tiny blue tits and wrens to larger species such as blackbirds and thrushes. Water is vital, and there doesn't have to be masses of it to be effective in attracting wildlife.

If you do have the space for a larger pond you may have to think first about the safety aspects of open water in your garden. Ponds with mesh covers, designed to make them

safe when there are small children around, are not good for wildlife, as these covers restrict access by birds, mammals and amphibians. If you are concerned about safety, you could create your pond in an area that can be securely fenced.

Maximise the potential for added shelter by covering your fence with native climbers such as hops, honeysuckle and ivy, or wildlife-friendly non-native wall shrubs. Cotoneaster will provide berries for birds, Ceonothus and open-centred climbing roses are good insect attractants, and in milder districts an ornamental grape could provide food and nest sites for birds. Supervise children when they are near the water, but don't deny them

the pleasure of pond dipping.

Choosing the correct spot for your pond is important. Full sun is recommended by many books, but my preference is always to choose a spot with a little shade, either from a building or from shrubs that do not have a heavy leaf-fall. A few leaves in a wildlife pond will do no harm – in fact they help to create a layer of humus in the bottom into which oxygenators and other plants can root, and this muddy layer houses aquatic creatures of all kinds. Large quantities of leaves, however, will choke the water and affect the water quality.

A pond in full sun is always likely to have problems with blanketweed, as strong sunlight and warm water

Plants for small ponds

It is important to avoid really large or rampant species if your pond is small – wetland plants grow so quickly that you will soon lose the open water, which is essential for dragonflies, damselflies and other wildlife too.

For a mini barrel pond or a pond less than a couple of metres in diameter, you could plant the yellow-flowered fringed water lily in the deeper water, with frogbit as a floating plant. Brooklime is vigorous but easy to keep under control and has pretty sky-blue flowers. A tiny rush such as the non-native *Typha minima* and some oxygenating plants will soon create a perfect environment for native wildlife.



The smallest of ponds is still an invaluable wildlife resource.



If you don't have space for a pond, create a barrel 'pond' but place some stones or a ramp in and outside the pond to help frogs and other creatures gain access.

Plants for larger ponds

If your pond is more than two metres in diameter you have a wide range of plants available to you. Marginals such as iris, loosestrife, meadowsweet, water mint, marsh marigold and forget-me-not, and rushes and reeds of all sorts, both native and non-native, will flourish on the ledges or in the shallow water. Choose a mixture of natives and simple non-natives rather than showy

flowers if you want a natural-looking pond. In the deeper areas, lilies will help to shade the water with their large leaves, creating a cool environment beneath them. Make sure you add plenty of oxygenators and avoid invasive non-natives. More information on the latter is available from Plantlife at www.plantlife.org.uk/uk/plantlife-campaigning-change-invasive-plants



Bogbean is a lovely choice for a larger pond.



Water lilies are useful as well as lovely, shading the water with their large leaves and discouraging blanketweed.



A pond will attract all manner of new insects, like this migrant hawkler.



encourage the growth of algae of all kinds. If a very sunny spot is your only option, make sure that you include plenty of aquatic plants in the deeper areas, especially lilies. These help to shade the water and reduce the amount of heat and light reaching it. A sunny spot will attract plenty of dragonflies and damselflies, but the key to a well-balanced pond is to find a place that is light, but not in direct sunshine all day.

Once you have chosen your site you can get digging! If you have turf to remove, set it aside as it will be useful later. Define your preferred shape with coloured string or even a hosepipe so that you get a feel for how it will look in relation to other features nearby. Go for a simple outline – an oval or kidney form is easier to line and it will look more natural.

A maximum depth of about a metre is good, but not essential, and the majority of the pond can be less than this. I always include ledges around most of the edge as these are good places to plant marginal species to give a natural appearance to the pond.

Bear in mind that the popular 'saucer' shape will lose water quickly if you have turf around the margin, as water will be drawn out of the pond into the surrounding soil. This is great if you want a boggy area all around your pond, but you will forever be topping it up. Ledges help to prevent this effect. One gently sloping edge is essential to allow wildlife to reach the water in safety. Hedgehogs and foxes will visit your pond to drink, and birds will bathe there, if the water is shallow and accessible. A word of warning here; there is nothing more heartbreaking than building a pond

only to find that a hedgehog has drowned in it having slipped in when grabbing a drink. Your shallow area must be safely sloping and if necessary offer the added precaution of a ramp to allow creatures to get themselves out of deeper water.

Once you are happy with the shape of your new pond, measure up for the liner. I find it easiest to use a flexible tape and run it from one edge across to the opposite side, making sure it lies on the bottom and sides of the pond. Do the same in the other direction, add a bit extra for the edges, and you have your liner size. Go for the best liner you can afford for longevity – though even a cheaper woven polythene one will make a wonderful pond. Several companies do good mail order pond liners. Bear in mind that the larger the pond the heavier the liner – you may need friends to help you move it!

Lining the pond is a matter of common sense. Use an underlay to protect the liner from sharp stones, place the liner into the hole without dragging if you can, and then use the turf you have saved, or stone-free garden soil, to cover as much of it as possible. This will provide a substrate into which your plants can be pushed, especially on the ledges. Lilies and oxygenators should go into the deeper areas – you could use planting baskets for these if you wish.

You may prefer to choose native plants, but non-natives are fine. The key to a good wildlife pond is to have plenty of plants of all types: marginals, oxygenators, plants with floating leaves and spiky emergent plants will all add to your watery habitat. Variety is more important than sticking rigidly to natives.

However, do at all costs avoid the invasive species that are causing so many problems, especially New Zealand stonecrop *Crassula helmsii*.

Water is the next priority! Tap water is likely to be the only resource you have in the required quantity, but making a pond at this time of year, when rainwater may fill it naturally, is a real advantage.

Once you have your basic pond, there is much to find out about maintaining and improving it. A book on the subject or information from the internet will give you the confidence to forge ahead. Your local wildlife will thank you for providing just about the best wildlife habitat you can. Frogs, toads, newts, birds, bats, hedgehogs, grass snakes, dragonflies and a host of other creatures may all be appearing in your garden in the near future.

RESOURCES

FURTHER READING:

- › [How to Make a Wildlife Pond](#) by Jenny Steel
- › [The Wildlife Pond Handbook](#) by Louise Bardsley
- › [How to Make a Wildlife Garden](#) by Chris Baines
- › [The Collins Guide to Freshwater Life](#) by R. Fitter and R. Manuel
- › Useful information is available at: www.froglife.org
- › www.naturalengland.org.uk

POND PLANT SUPPLIERS:

Wetland plants are available from most garden centres or by mail order. Paul Bromfield Aquatics has a good range of both natives and non-natives available at www.bromfieldaquatics.co.uk

Building a pond step-by-step



When digging a new pond, make sure to include ledges on which to plant marginal species.



Once you are happy with the shape of your pond, install the underlay, the liner and the plants.



Just add water!

Top 10 sustainable gardening tips

There are many techniques you can use to garden with the environment in mind. Here are just a few ideas to help you create a sustainable garden.

2 PEST AND DISEASE CONTROL

If you can keep your soil in good condition and take other measures (see below) you will help deter many pest and disease problems but with the best will in the world you cannot completely avoid the odd pest being troublesome. However, there are plenty of tips and products to help the organic gardener. Biological controls are brilliant for keeping pests at bay. These are based on predatory creatures such as microscopic nematodes that naturally prey on garden pests. There are different biological products to treat different problems such as slugs and caterpillars but Nemasys Grow Your Own contains a mix of different nematode species that will control carrot root fly, cabbage root fly, leatherjackets, cutworms, onion fly, caterpillars, gooseberry sawfly, thrips and codling moth. (For more details www.nemasysinfo.com)



3 CHOOSE YOUR SEEDS CAREFULLY

Starting off with the best seed is important and growing the right varieties for your growing conditions is important. However, it is often trial and error to find what grows best. Some gardeners have problems growing carrots but it is worth persisting and trying several varieties and you may find one does better in your soil.

If you choose to buy organic seed from suppliers this means the seed has been produced organically and no synthetic pesticides and fertilisers were used in the growing of the plants that produced the seed. The seed will also not be coated in fungicide as occasionally seeds are treated.

Some crop varieties have also been bred to resist common pests and diseases and these are useful for the organic gardener.

7 GROWING COMPANION PLANTS

There are many popular plant combinations that gardeners swear by including growing marigolds with tomatoes to keep whitefly at bay. Some have been scientifically proven while others are based on old wives tales or just simply gardener's experience. Whatever your view on specific combinations, it has certainly been proved that having a wide variety of plants and flowers together does seem to encourage a greater range of insects including pest predators and pollinators. Having a mix of species can also confuse the pests and make them move on rather than alight on your crops. You can add as little or as much as you wish but obviously you need to get a balance so the companion plants are not in competition with the crops. It can be achieved by sowing rows of annuals such as pot marigolds between rows of crops if you have room or sow at the end of rows or on areas that you are not cropping.



8 BE WILDLIFE FRIENDLY

Encouraging a wide range of habitats and creatures to your garden will create a natural balance helping to prevent infestation of pests and disease. Companion planting, as described above is one way to increase the diversity of insect visitors but other measures can be taken such as making a small water feature, having a nettle patch or small meadow area or log pile. Stacks of old broken pots will provide a home to insects too.

1 HOW TO GET MY SOIL READY

The key to getting good healthy crops is to have a good healthy soil to grow them in. Most soil types will benefit from plenty of organic matter incorporated in the form of well rotted garden compost. Horse manure is particularly good although other animal manures such as poultry is also beneficial. These should be left in a heap for 6-12 months before use as they will be too strong and rich if applied fresh and will damage the plants. It is also important to know the source of the animal manure to ensure no weedkillers were used on the pasture that the animals grazed on.

Some vegan gardeners prefer not to use animal manures so an alternative is to use home-made compost or sow green manure crops. These are dug into the soil while still young to provide fertility and improve soil structure. There are many different green manure crops for sowing at different times. If growing them over winter they can reduce the problem of nutrients washing through the soil.

Check out the website www.greenmanure.co.uk for plenty of information and to buy seeds. Also The Organic Gardening Catalogue (www.organiccatalogue.com tel: 01932 253666 and Kings Seeds



4 COMPOSTING

Composting is the ideal sustainable way to get rid of garden waste and create a brilliant soil conditioning material. It is pure 'gardeners gold' and can't be beaten for its wonderful benefits to the soil.

See pages 10-13 for more information on creating the best compost.



5 WEED CONTROL ORGANICALLY

There are several control methods depending on the seriousness of the weed infestation and what you have growing on the plot. If weeds are a problem between crops then hoeing or hand weeding is the best option. If you have pathways or large uncultivated areas that you want to keep weed growth down or smother existing weeds then mulching is popular. A mulch is a material that covers the soil and good examples include bark, straw, cardboard or the special black permeable membrane sold off the roll in garden centres.



6 FEEDING PLANTS

If you keep your soil in good health by adding garden compost or manure annually then you are naturally improving the soil nutrition and nutrient holding capacity of the soil. However, you may want to apply some extra feed and there are plenty of organic fertilisers available off the shelf from garden centres and specialist suppliers. The Organic Gardening catalogue (www.organiccatalogue.com) lists a range of organic feeds including comfrey pellets or Chase Animal Free fertiliser. Other feeds to look out for from the garden centre are Westland Potato and Vegetable Feed, Vitax Tomato, chilli and pepper fertiliser plus many more. There is also the classic blood, fish and bonemeal fertiliser that will provide a slower release feed for your soil.

There is also the option of making your own fertiliser by steeping a sack of manure in a barrel of water or placing comfrey or nettle leaves in a container and diluting the resulting brown liquid 15 parts water to one part of the liquid.

10 RECYCLE

Gardeners are great recyclers using waste materials in the garden. There are lots of top tips on using household products in the garden including old plastic bottles to use as mini plant cloches. Old CDs to hang up to scare the birds. You can also reuse some of your container compost by adding some fresh peat-free compost and fertiliser. As long as the crops were not diseased and remained healthy you can reuse a third of it again. If you do need to dispose of old compost then mix it onto some flower borders rather than the veg patch just in case any diseases are lurking.

Making paper pots out of newspaper is a good way of reducing the use of plastic in the garden. These home-made paper pots can be planted in the ground as long as they are soaked before you do so.



9 WATER WISELY

Water is a precious resource even in Britain and so still need to conserve it as best we can. Ideally install water butts to collect water running off the house roof or your greenhouse and shed. You can buy special link up kits to joins several water butts together which could provide you will all the water you need.

If you have to water crops then try and direct it to the roots and not spray over the foliage. Sinking upside down plastic bottles with the bottoms removed close to plants can help direct water to the roots. Soaker hoses laid along rows directs water to the base of the plant. It is a good idea to avoid watering at midday when hot to prevent water loss by evaporation. Water early or late in the day.



Green Buys



PLANT HOUSE

This wooden framed plant house is ideal for placing against your house or a wall close to your back door or on your patio. It is made from acacia wood that is sourced from sustainable forestry. It is ideal for protecting more vulnerable plants during the colder months or you could use it to harden off your young vegetables such as tomatoes and French beans. It could also be used at this time of year to extend the growing season. Sow trays or pots of winter lettuce and salad leaves now and the plant house will keep them ticking over at least until the very severe weather arrives.

The Acacia Plant House measures 76cm (30in) by 110cm (3ft 7in) tall by 47cm (18in) deep.

Price: £179.99 plus delivery cost. For more information: Haxnicks; tel: 0845 241 1555. www.haxnicks.co.uk

LEAF SACKS

These biodegradable leaf sacks are made of loose weave jute and come in a set of three.

They are ideal for storing and composting down leaves. Once filled with leaves they can be placed behind a shed or under a hedge out of the way and left to rot down. It can take leaves a couple of years to turn

into beautiful crumbly leaf mould that makes the perfect soil conditioner. The sacks measure 95cm by 65cm (37in x 26in). Price: £5.95 for set of three. Buy two sets for £10.90 saving £1.

For more information contact: Harrod Horticultural; tel: 0845 402 5300. www.harrodhorticultural.com



BOOTY BOPPERS

Boppers are shiny high-top welly trainers, an exciting new way to combine casual, practical footwear with a colourful splash of fashion. They are available in four striking PVC colours, pink, purple, black and red, and they are waterproof as well as stylish. They would certainly cut a dash down at the allotment or just for popping down the garden to pick a few veg. Boppers are lace-ups but they also have a top Velcro strap. The boots are comfortable to wear and a great alternative to the traditional Wellington boot when the ground is a bit damp and doesn't really warrant wellies. Boppers are available in five sizes, 4, 5, 6, 7, 8, and retail between £34.99 and £39.99.

Boppers are manufactured by Briers, one of the leading gardening gloves and footwear suppliers in the UK. Briers sells through garden centres and retailers across the UK. For more information visit: www.briersltd.co.uk



SOLAR LIGHTING

The Solo Security Light uses powerful LEDs that produce a bright light that is ideal for security lighting. No mains wiring is required so it is ideal for a shed at the bottom of the garden.

The light will come on when motion is sensed and it can be set to stay on for five seconds or up to five minutes. The lamp will swivel up and down and side to side so you can set the direction of the beam. A 1.8m (6ft) cable joins the light to the solar panel so you can fix the panel where it can get the maximum amount of sun. The kit also comes with a rechargeable battery pack.

Price: £25.95 with £4.99 delivery. For more information: Two Wests and Elliott; tel: 01246 451077. www.twowests.co.uk



COMPOST ACTIVATOR

Getting your compost heap to rot down well is not always as easy as it sounds. You need to keep the heap aerated and layers mixed to enable the microbes to do their work. However, help is at hand with compost activators. These give the microbes a boost and help to break down the material quicker. QR Compost Activator from The Organic Gardening Catalogue has been sold for more than 50 years and is tried and tested. It is made from powder composed of herbal preparations, seaweed and honey. This is mixed in water and applied to the heap. It can also be used in septic tanks to help prevent odours. Price: Small (sufficient for two cubic metres of compost) £1.85; medium £3.95 and large £10.95. For more information: The Organic Gardening Catalogue; tel: 01932 253666. www.organiccatalogue.com



FLEECE TUNNELS

It is possible to extend the growing season by growing more winter hardy lettuce and other salad leaves such as corn salad and mizuna under cloches and fleece. These Easy Fleece Tunnels from Harrod Horticultural are perfect for protecting your late sown salad crops. They are covered in high grade (30gsm) polypropylene fleece which allows sunlight, moisture and air through while lifting the temperature beneath.

There are two sizes. Large measures 3m (10ft) by 45cm (18in) wide by 30cm (12in) high. The giant size is 3m (10ft) by 60cm (2ft) wide by 45cm (18in) high. Price: Large £15.95. Giant £24.95. For more information: Harrod Horticultural; tel: 0845 402 5300; www.harrodhorticultural.com



FUMIGATE YOUR GREENHOUSE

Two products from The Organic Gardening Catalogue will help to clean your greenhouse ready for the winter and next season.

Biofume Greenhouse Fumigator is used while you still have plants in the greenhouse to control pests. It is a good one to apply during the growing season when pests have started to take hold. It will reduce the numbers so you are going into the winter with hopefully less pests overwintering as eggs in the cracks and crevices of the greenhouse. Biofume Greenhouse Fumigator contains garlic oil and the canister is simply placed on the greenhouse floor and lit. It will kill any biological control predators so don't use if you have introduced these into the greenhouse. This product will not kill the egg stage so it is useful to apply this once or twice before the end of the season to get on top of pest numbers so they are not laying eggs on the greenhouse structure.

At the end of the growing season when you have removed all plants you could then use the Sulphur Candle. This must only be used in a completely bare greenhouse. The candle is lit and left on the floor of the greenhouse making sure you have closed all vents and the door is shut. It is a useful way of really cleaning into the crevices and again will kill hibernating pests such as red spider mites.

This done the greenhouse structure can be given a good scrub in preparation for the season ahead.

Price: Biofume Greenhouse Fumigator costs £6.95. The Sulphur Candle costs £8.75. For more information: The Organic Gardening Catalogue; tel: 01932 253666; www.organiccatalogue.com



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Seer Rockdust is 420 million year old volcanic rock. Finely crushed to release a wide range of minerals and trace elements, it boosts the organic fertility of soil and compost to grow higher yields, healthier fruit, vegetables, flowers, trees, lawns and pastures. Full application details and benefits available on request.
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Fumigate your greenhouse this autumn. A disinfectant for any size greenhouse up to 10 cubic metres in volume (approximately 10 x 6ft/3 x 2m), which will reach those hard to reach areas of an empty greenhouse.
Full directions for use are printed on the candle.
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The ultimate in secateurs has everything you need to make light work of pruning. The rotating handle allows natural use of the fingers and requires 30% less effort.
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AUTUMN CLEAR UP KIT

Handy Hands

Fill your leaf sacks in half the time with these useful scoops. Lightweight and fitting any size hands comfortably, you will find them invaluable for scooping up grass clippings and piles of weeds as well as fallen leaves and garden debris. 38 x 38 x 7.5cm (15 x 15 x 3in).



100% Biodegradable Leaf Sacks x 2

Fallen autumn leaves might be regarded as a chore, but to organic gardeners they are a source of rich nutrients for the forthcoming spring planting. Once filled, love 'em and leave 'em. The leaves and the sack will biodegrade and you will have (already delivered) that green gardening cornerstone – wonderful compost.



Bos-Skip

Made to last from high quality, UV stabilised woven polythene with wipe clean surfaces. Ideal for collecting bulky garden and household rubbish. Tough and very durable. Stands up for easy filling. 150 litre capacity (5.3cu-ft) 69 x 69 x 40cm (27 x 27 x 16in)
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PRUNING SAW

Neat implement that folds up for easy and safe handling. The total length, when opened fully, is 39cm (15in) including the 16cm (6in) blade. Will easily cut branches up to 9cm (3½in) thick.
Order code: KG 45943
OFFER PRICE: £21.95 SAVE £5 (RRP £26.95)



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Simply call the credit card hotline on 01376 570000 and quote the order code(s) of the item(s) you wish to receive. Or send a cheque made payable to 'Kings Seeds' and send to: Kitchen Garden October Offers, Kings

Seeds, Pantlings Lane, Coggeshall Road, Kelvedon CO5 9PG. Please note £1.50 p&p per order (not per item). Delivery to UK mainland only. Offer expires October 31, 2012. Offer is subject to availability.

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	Sulphur candles	KG45171	£7.95	
	Rockdust	KG 46055	£11.95	
	Pruning saw	KG 45943	£21.95	
	Felco No. 7 secateurs	KG 45942	£49.65	
	Autumn sowing seed collection	KG 00700	£5	
	Autumn clear up kit	KG 46200	£16.50	
Postage & packaging				£1.50
TOTAL				

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