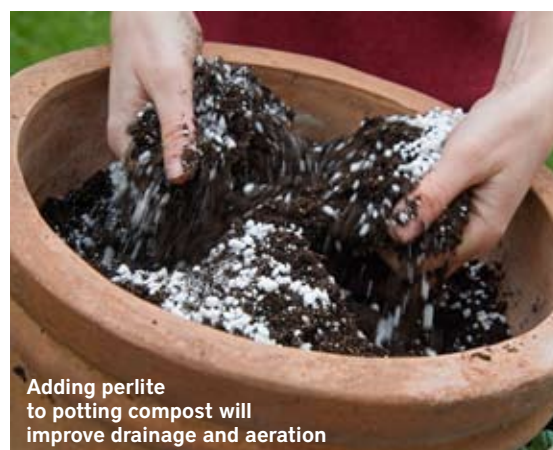


GARDEN PRACTICE

Know your compost

Garden centres stock an often-bewildering range of potting composts and media. **Maya Albert** explains which to choose. Photography by Tim Sandall



Adding perlite to potting compost will improve drainage and aeration



Compost using wood fibre is a recent development

CHOOSING A COMPOST to pot up a plant is not as simple as it may at first seem. Today there is an almost overwhelming choice of different media on the market, varying in price, purpose (specialist uses), quality and, increasingly, green credentials.

A potting compost must allow healthy root growth, letting the plant fulfil its potential. It needs to provide anchorage for the plant and have good structure – which means open enough to allow aeration for gas exchange at the roots and drainage of water, yet also providing a suitable moisture-holding capacity. Composts must also, vitally, deliver a steady supply of nutrients to the plant.

Many people automatically reach for a bag of multi-purpose compost, probably buying on price without thinking of the requirements of a particular plant. For example, some, such as camellias, need acidic soil (of a low pH) and require ericaceous compost; others, such as succulents, need sharply drained compost. It is important to know what to look for: you may need a loam-based compost, or perhaps a particularly moisture-retentive mix.

Proprietary composts will suit most needs and have been carefully developed for their stated use, but some gardeners blend their own for particular requirements. Using differing amounts of constituent materials alters compost characteristics: more perlite, vermiculite, grit or sharp sand increases drainage and aeration; a higher percentage of loam makes a heavier, nutrient-rich mix for long-term planting. Some of these ingredients also have uses when sowing seed or rooting cuttings.

Soilless composts

Potting composts without soil/loam (see p41) are used widely in container gardening. They consist of peat or peat substitutes, such as composted organic waste or wood fibre (above), mixed with sand, perlite, bark chip or vermiculite for added drainage and aeration. These composts can be adjusted by the gardener for specific plants by adding extra amounts of constituent materials.

Peat-based multipurpose compost 1 has, since the 1960s, been the most widely used potting compost, suitable for single-season bedding and propagating mixes. Peat comes from areas of acidic, waterlogged ground where organic matter breaks down slowly, accumulating as peat. It is cheap, free of pathogens, of consistent performance, and holds water and nutrients well. There are, however, serious concerns about how extraction of peat damages natural habitats; the UK Government has set a target for growing media and soil conditioners to be 90 percent peat-free by 2010.

Peat-reduced and peat-free composts 2 use a range of organic materials such as bark fines and coir. One manufacturer has recently started using wood fibre to make lightweight composts of consistent quality with good moisture and nutrient retention.

Composted municipal green waste 3 is used by some local authorities and compost manufacturers in growing media. These are variable in performance and price. A few are good enough to use as potting compost for single-season bedding; most are better as soil improvers. ▶ 41



USES AND MODIFICATIONS



Using vermiculite for sowing

When sowing seeds into a proprietary compost for seed and cuttings, cover them with a thin layer of fine vermiculite. This will create a humid, warm and aerated environment ideal for germination. Vermiculite helps to inhibit damping off (rotting) of seedlings. Seeds that need light to germinate (such as *Alstroemeria* and *Paulownia*) can still be covered lightly with vermiculite, as it also allows light to reach the seed.



Enriching compost with well-rotted manure

Enrich multipurpose compost by mixing in well-rotted manure (if it is not well rotted, plant roots can be damaged) toward the base of the pot before planting summer bedding. This will aid water- and nutrient-retention of the compost. You will still need to use slow-release fertiliser granules or liquid feed to get the best displays from your plants: while manure will provide some extra nutrients, it is not a substitute for regular feeding.



Adding perlite for improved drainage

Winter bedding in containers can suffer waterlogging in heavy rainfall; mixing perlite into the compost will open it up and improve drainage. Place broken crocks at the bottom of the pot to protect drainage holes from silting up. Blend 70 percent multipurpose compost with 30 percent perlite by volume; fill the pot, standing it on pot feet to allow free drainage. Remember to water in dry spells, as plants will be more vulnerable to drought.



Potting up with ericaceous compost

Plants such as rhododendrons potted into multipurpose compost may show signs of stress. Yellowing between the leaf veins can indicate excessive alkalinity (these plants prefer acidic ericaceous compost). Red or brown blotching and scorching at the leaf edges can also be signs of plant stress. Instead, repot into acidic compost, ideally John Innes ericaceous, as extra anchorage, acidity, nutrient retention and drainage will improve plant health.



Adding grit to improve drainage

Many popular shrubs, perennials and bulbs come from areas with a dry, Mediterranean climate and stony, well-drained soil. To reproduce these soil conditions so the plants perform well, mix three parts grit and seven parts multipurpose compost by volume to form a light, dry growing medium. If using bulbs in loam-based compost with other plants, place a 2.5cm layer of grit at the bottom of the planting hole, as this will further aid drainage.



Incorporating bark chips for woodland conditions

Woodland perennials such as hellebores, ferns, epimediums and heucheras enjoy soils that are moist but well drained and rich in organic matter. If growing them in containers, ideally use peat-free multipurpose compost, but open up the soil structure by adding bark chips. This will improve overall drainage while at the same time allowing the compost to remain moist and cool, sustaining plant growth.

Coir-based multipurpose compost consists of waste coconut fibres, mainly from Sri Lanka, with various added ingredients. Like peat, coir is pathogen free, consistent in its performance and ideally used for single-season bedding plants and propagation mixes. It does not hold on to nutrients well, but is good at retaining water. More expensive than peat, and sometimes contaminated with salt, coir's 'product miles' lower its green credentials considerably.

Wool-based compost, a recent addition to the market, is not yet available nationwide. It uses waste wool from sheep shearing, is high in nitrogen and is moisture retentive. Wool is often mixed with composted manure or bracken in the final product. It is an interesting niche product and development work continues.

Loam-based composts

Loam is a mixture of sand, clay and silt (the three main mineral constituents of soil). While garden soils may have high proportions of clay or sand, a good loam is the perfect mixture, and loam-based composts such as John Innes potting compost (see below) are the most-easily managed medium for permanently containerised trees, shrubs and perennials.

John Innes composts are made from sterilised loam, peat and grit with added lime and fertilisers to standardised recipes developed by the John Innes Institute in the 1930s. They are more expensive and heavier than multipurpose composts, providing good plant anchorage. John Innes No. 1 has the least fertiliser (for short-term pot plants); No. 2 has more nutrient (for permanent pot plants with low fertiliser needs); No. 3 has the most fertiliser (for a wide range of permanent container plants). John Innes ericaceous compost is formulated for lime-hating trees, shrubs and perennials.

Specialist composts

Some plants have specific compost needs, for example, orchids need compost with added bark chips, while most cacti do best in an extra-gritty mix. Others include:

Aquatic compost consists of sterilised loam and grit with controlled-release fertiliser. Aquatic plants need the weight of loam to anchor them in the water, and specific controlled-release fertilisers to prevent the nutrients from leaching into the water, resulting in excess algal growth.

Ericaceous compost is made from peat with less added lime and with different fertilisers from peat-based multipurpose compost. A peat-free ericaceous compost was recently launched (see News, Dec 2008, p780). Ericaceous peat and peat-substitute based compost is suitable for acid-loving plants. With the addition of chipped bark or perlite, it makes a good potting medium for plants such as *Meconopsis*. Although peat and peat-substitute based ericaceous composts are suitable for ericaceous trees and shrubs, these are often easier to manage in John Innes ericaceous compost.

Growing media and additives

Various materials can be added to potting composts to alter their properties, making them more suitable for the growth of certain specialist plants. Free-draining mixes dry out faster and leach nutrients quicker than mixes containing high proportions of organic matter or loam.

Perlite is a man-made product produced by crushing and heating a volcanic glass to 1,000°C. It expands into a lightweight shell, filled with air. More durable than vermiculite (below), perlite is a lightweight alternative to grit for 'opening up' compost (see p38). Moist perlite can also be used as a sterile rooting medium for cuttings.

Vermiculite is also man-made, produced by heating a type of clay to 1,000°C for one minute, causing the mineral to expand into an open lattice structure with a dry, spongy feel. Vermiculite is sterile, contains plant nutrients, and improves the drainage and water-holding capacity of composts. Fine vermiculite makes good cover for germinating seedlings and rooting cuttings.

Horticultural grit is a natural material derived from rock, with particles around 5mm or less. It opens up compost better than sharp sand, creating spaces to allow good drainage. It also adds weight to compost (useful for top-heavy plants), improves plant anchorage, and is lime-free, so does not raise the compost's pH.

Fine bark chips are cheap, with good drainage, but have a low ability to hold onto water and nutrients. Bark is variable in its constituents and performance. Sustainable to produce in the UK, chipped bark is common in peat-free composts.

Sand is a natural material that varies in particle size and constituents. Coarse sands improve drainage, but fine sands actually aid the wettability of potting mixes. Horticultural sharp sand is selected for its good mix of smaller and larger grains (3mm and below). It is lime-free (unlike builders' sand), so will not raise pH, improves drainage and adds weight to the growing medium.

Matching your plant to the most suitable medium is key to successful establishment. While blending your own is of use for plants with specific needs, ready-mixed composts are the simplest option for most gardeners, and the range available suits most situations. ■

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THE RHS AND PEAT

The RHS endorses the need for strong protection of peat bogs. It encourages gardeners to use alternatives to peat and considers unacceptable the use of peat as a soil improver or mulch (that is, adding peat to soil in the garden). The Society undertakes and supports research into peat alternatives, and aims to be 90 percent peat free within RHS gardens by 2010. It strongly encourages gardeners to use peat-free and peat-reduced compost when possible.