



**GARDEN  
KNOW HOW  
No. 3**

How to grow perennials  
from seed



Everything you need to know  
about starting perennials  
from seed

*By Judith Adam*



# How to grow perennials from seed

## GARDEN KNOW HOW No. 3

From the editors of Garden Making

### From Beckie

Growing perennials from seed is an economical way to add new plants to your flowerbeds and borders. However, germinating perennial seeds successfully requires knowing how to break their dormancy.

This Garden Know How explains which seeds need to be started in moderate, cold or chilled temperatures. You'll also find other useful tips to keep your new perennials healthy and thriving. Soon, you'll be sharing homegrown delphiniums, Shasta daisies, phlox and columbines with family and friends.

*Beckie.*

Beckie Fox, Editor-in-Chief



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Seeds of annuals germinate quickly in any season whenever they encounter light, moisture and warmth. Those of perennials, however, are more specific about the timing and conditions for germination.

Many are endowed with “germination inhibitors:” chemicals that prevent germination until the best sustained air and soil temperatures are available to favour growth of the seedling plant; and/or physical features, such as a seed coat, which must be worn away by abrasion or degraded by soil bacteria before moisture can enter the seed.

These inhibitors prevent perennial seeds from germinating in a sudden and temporary winter thaw, for example, when freezing conditions will quickly return for the duration of season. (Germination inhibitors are sometimes spoken of as “dormancies,” because they cause seeds

to be temporarily dormant until favourable growing conditions are established.) Many perennial seeds have only one such inhibitor (either a thick seed coat or a chemical inhibitor), but there are others with multiple dormancies built into the seed’s biology. The chemical inhibitors are often in the seed coat, or may be stored within the tissues of the embryo.

Gardeners can overcome germination inhibitors by manipulating temperature, light and moisture conditions. But it’s important to know something about the perennial seeds you want to grow, and what dormancies you can expect to encounter when germinating them.





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## Starting perennial seeds outdoors

If you collect perennial seeds in late summer, you can simply plant them in containers using a soilless mix (just as if they had fallen from the plant onto the ground). Set the containers on a tray and cover with a piece of screening material for protection, then put them outside under the shrubbery. Winter snow will bury the tray and cold temperatures will work on the seeds until spring, when hopefully you'll find them germinating.

By midsummer, you should have seedling-sized plants to set into the garden.

Seeds collected from the garden or received from a plant society seed exchange (a good place to find rare seeds) are certainly worth growing, but be aware that they occasionally harbour fungus spores. The highest germination rates always come from freshly purchased seeds.



### TIP

Getting perennial seedlings into the ground outdoors as early as possible will encourage first-year bloom.



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## Starting perennial seeds indoors ❖❖❖

Winter is an ideal time to start seeds of perennials indoors with an accelerated method. Once they've germinated, the seedlings will have two to three months of indoor growing to strengthen before you set them out into the early spring garden for a long growing season.

First, research the seeds you want to grow. The back of the seed packet, or the catalogue you've purchased them from, will tell you what temperature the seeds need and for how long; also, if they require light or darkness for a period of time, and if they should be buried in the soil or sown on the surface. For instance, Shasta daisies (*Leucanthemum*

*×superbum*) and balloon flower (*Platycodon grandiflorus*) require light to germinate and must be surface sown; delphiniums (*Delphinium* spp. and cvs.), border phlox (*Phlox paniculata* cvs.) and violets (*Viola* spp. and cvs.) need darkness to germinate and should be covered with one-quarter inch (6 mm) of soil.

Many seeds will accept either light or dark conditions, while others are more complicated in their requirements, like peonies and trilliums, which need several alternating warm (with light) and cold (with dark) cycles to germinate. Seeds that require light to germinate should be gently pressed onto the soil surface.





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### Starting perennial seeds indoors

You can easily find specific information about temperature, light and timing for many perennials by searching an online seed germination database. Don't be surprised if there is more than one recommended method for starting your seeds—either method may work, so take your pick. You'll find information about perennial seeds that will germinate at moderate room temperature, or in slightly cool temperature, around 10°C, or perhaps with combined warm days and cool nights. Certain perennials will require moist chilling at colder temperatures to germinate.

Regardless of the method of germination, once your seeds have germinated, plant them into new cell packs or clean containers in soilless mix and place under grow lights or in strong natural light from a window. Begin to acclimatize them to outdoor temperatures when they reach three to four inches (8 to 10 cm) tall, putting them outside in shade for two hours each day for two weeks. Transplant them into the garden when day and night temperatures remain above freezing.



#### TIP

When starting seeds in containers, outdoors or indoors, always use new plastic cell packs or scrupulously clean pots to avoid fungus infections.



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## Seeds requiring moderate room temperature (21°C)

Many perennials easily germinate and grow in moderate temperatures, much like the comfortable temperature in your home. If your home is cool in winter, look for a consistently warm spot in the kitchen, such as the top of the refrigerator. Normal room light will be sufficient for seeds requiring light to germinate. Avoid direct sunlight, which will overheat the seeds.

Plant seeds into moist soilless mix, in plastic cell packs or individual containers, and lay a sheet of plastic film over top. Periodically check containers for moisture. When seeds sprout, move them under a grow light or direct light from a window.

### Examples:

Rock cress (*Arabis* spp. and cvs.)  
False rock cress (*Aubrieta deltoidea*)  
Red valerian (*Centranthus ruber*)  
Pinks (*Dianthus* spp. and cvs.)  
Foxglove (*Digitalis* spp. and cvs.)  
Leopard's bane (*Doronicum caucasicum*)

Balloon flower (*Platycodon grandiflorus*)  
Jacob's ladder (*Polemonium caeruleum*)  
Scabiosa (*Scabiosa* spp. and cvs.)  
Stonecrop (*Sedum* spp. and cvs.)  
Lamb's ears (*Stachys byzantina*)  
Speedwell (*Veronica* spp. and cvs.)





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## Seeds requiring cool, moist conditions (10 to 15°C)

If your seeds need cool conditions, consider an unheated basement room or attached garage with temperatures around 10°C, and with a window. Avoid direct sunlight, which will raise the temperature in the planting containers. Natural indirect light is sufficient for germinating purposes, and a table can be placed near the window to hold your containers of seeds. If there are several cell packs

or small containers, simply put them on trays in the cool garage or basement and lay a sheet of plastic film overtop. If any of the seeds require darkness, lay two sheets of newspaper over the plastic film (it doesn't have to be pitch dark). Check weekly to be sure the soilless mix is still moist, and use a fine spray of water to carefully wet dry areas near the edge of the plastic film as necessary.

### Examples:

Astilbe (*Astilbe* spp. and cvs.)  
Turtlehead (*Chelone glabra*)  
Pinks (*Dianthus* spp. and cvs.)  
Daylily (*Hemerocallis* spp. and cvs.)  
Candytuft (*Iberis sempervirens*)  
Shasta daisy (*Leucanthemum* × *superbum*)

Lupin (*Lupinus* spp. and cvs.)  
Evening primrose (*Oenothera* spp. and cvs.)  
Border phlox (*Phlox paniculata*)  
Primrose (*Primula* spp. and cvs.)  
Pasqueflower (*Pulsatilla vulgaris*)







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## Seeds requiring cold, moist chilling (1 to 4°C) ❖❖❖

For perennial seeds (and those of many woody plants) that need moist chilling—either with no particular light requirement or seeds that need darkness—your refrigerator is a useful tool. Refrigerators generally provide cold air in the range of 1 to 4°C, good for starting seeds requiring only a short period of cold to germinate. Giving seeds a moist, cold period (called stratification) in the refrigerator allow the seeds to absorb moisture, swell and develop the embryo, as well as soften the seed coat, and dissipate chemical inhibitors possibly present.

### Examples:

Columbine (*Aquilegia* spp. and cvs.)  
Butterflyweed (*Asclepias* spp.)  
Masterwort (*Astrantia* spp. and cvs.)  
Bergenia (*Bergenia cordifolia*)  
Delphinium (*Delphinium* spp. and cvs.)  
Gas plant (*Dictamnus albus*)  
Gentian (*Gentiana* spp. and cvs.)

If the seeds are large enough to handle, put them into a new plastic food storage bag, along with a handful of moistened (but not dripping) vermiculite. Seal the bag, allowing air to remain inside (the seeds need to breathe oxygen), and gently turn it over a few times to mix the seeds into the vermiculite. Write the seed name and date on masking tape and stick it on the bag, and store in the refrigerator crisper bin. Try to place the bag where it won't be disturbed and nothing will rest on top of it.

Bleeding-heart (*Lamprocapnos spectabilis* syn. *Dicentra spectabilis*)  
Cardinal flower (*Lobelia cardinalis*)  
Maltese cross (*Lychnis chalcedonica*)  
Evening primrose (*Oenothera* spp. and cvs.)  
Violets (*Viola* spp. and cvs.)



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## Seeds requiring cold, moist chilling (1 to 4°C)

Start checking the bag for germinating seeds after two weeks, just in case there are any early starters. When you find seeds that have put out their first root (the radicle, or foot root), carefully remove them and pot them up into new cell packs or scrupulously clean small containers. Keep them in a cool place under a grow light or near a bright window (they will soon put up a first leaf).

Seeds that are too fine to handle can be planted into small pots with moistened soilless mix, enclosed in a plastic bag and

kept refrigerated in the same way. Remove the pots from the refrigerator when seedlings begin to germinate and place them under a grow light or near a bright window.

Some seeds wait to germinate until after they're removed from the cold. Remove all seeds from the refrigerator after six weeks and place them under a grow light at cool room temperature (10 to 16°C) while waiting for germination. Avoid direct sunlight on seeds still enclosed in plastic bags.



### TIP

When watering seeds, use a fine mist from a spray bottle, or set containers into one inch (2.5 cm) of warm water and let them soak up moisture. A strong stream of water will dislodge and scatter seeds.



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## When will my perennials bloom?

Most perennials grown from seed flower in their second year, and every year thereafter. Some seedlings grow rapidly when started early, in January or February, and may reach blooming size

the first growing season; they flower slightly later and have fewer blossoms than in subsequent years. For a first-year flower display, try growing these perennials from seed:

### Examples:

tickseed (*Coreopsis grandiflora*)  
purple coneflower (*Echinacea purpurea*)  
blanket flower (*Gaillardia × grandiflora*)  
butterfly gaura (*Gaura lindheimeri*)

cardinal flower (*Lobelia cardinalis*)  
Maltese cross (*Lychnis chalcedonica*)  
rose campion (*L. coronaria*)  
black-eyed Susan (*Rudbeckia fulgida*)



### TIP

Fertilize seedlings once, when they are two inches (5 cm) tall, using an all-purpose formula similar to 10-10-10, diluted to half-strength.

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