

Optimal Soil Temperature For Flower Seed Germination

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June 23, 2022



Seeds are in a dormant state until the right conditions occur which triggers the end of dormancy. There are a number of critical factors that determine when a seed will germinate including moisture, oxygen and the right soil temperature. Some seeds also require a period of cold, known as cold stratification. This mimics the normal winter a seed would usually experience before germinating once temperatures warm up in spring.

We recommend gardeners purchase a soil temperature thermometer to check soil temperature before sowing seeds. These are available from most nurseries or online.

	Contents	Fahrenheit	Stratification?
	<ul style="list-style-type: none">• Celsius• Fahrenheit• Stratification? Celsius		
African daisy (<i>Arctotis stoechadifolia</i>)	18 – 21	65 – 70	No
African daisy (<i>Osteospermum spp.</i>)	21 – 24	70 – 75	No

Alyssum (<i>Lobularia maritima</i>)	12 – 23	55 – 75	No
Amethyst flower (<i>Browallia spp.</i>)	18 – 21	65 – 70	No
Aster (<i>Aster spp.</i>)	18 – 23	65 – 75	No
Baby's breath (<i>Gypsophila spp.</i>)	15 – 18	60 – 65	No
Balloon flower (<i>Platycodon grandiflorus</i>)	16 – 20	60 – 68	No
Bear's breeches (<i>Acanthus mollis</i>)	18 – 21	65 – 70	No
Bee balm (<i>Monarda didyma</i>)	16 – 21	60 – 70	No
Begonia (<i>Begonia spp.</i>)	18 – 21	65 – 70	No
Bellflower (<i>Campanula spp.</i>)	21 – 23	70 – 75	Yes
Bells-of-Ireland (<i>Moluccella laevis</i>)	13 – 18	55 – 64	Yes
Black-eyed Susan (<i>Rudbeckia hirta</i>)	18 – 21	65 – 70	Yes
Bleeding heart (<i>Dicentra spectabilis</i>)	4 – 12	40 – 55	Yes
Boltonia (<i>Boltonia spp.</i>)	18 – 21	65 – 70	No
Borage (<i>Borago officinalis</i>)	18 – 29	65 – 85	No
Bugle flower (<i>Ajuga spp.</i>)	10 – 15	50 – 60	No
Bugloss (<i>Anchusa capensis</i>)	18 – 21	65 – 70	No
Butter daisy (<i>Melampodium paludosum</i>)	18 – 21	65 – 70	No
Butterfly flower (<i>Schizanthus spp.</i>)	18 – 22	65 – 71	No
Butterfly weed (<i>Asclepias tuberosa</i>)	18 – 24	65 – 75	Yes
Calendula (<i>Calendula officinalis</i>)	18 – 21	65 – 70	No
Californian poppy (<i>Eschscholzia californica</i>)	12 – 21	55 – 70	No
Candytuft (<i>Iberis spp.</i>)	23 – 29	75 – 85	No

Canterbury bells (<i>Campanula medium</i>)	18 – 21	65 – 70	Yes
Cape jewels (<i>Nemesia strumosa</i>)	13 – 18	55 – 65	No
Carnation (<i>Dianthus spp.</i>)	15 – 21	60 – 70	No
Catnip/catmint (<i>Nepeta spp.</i>)	18 – 21	65 – 70	No
Chamomile (<i>Matricaria chamomilla</i>)	18 – 21	65 – 70	Yes
Chilean bellflower (<i>Nolana paradoxa</i>)	20 – 22	68 – 72	No
Chinese aster (<i>Callistephus chinensis</i>)	20 – 23	68 – 73	No
Chinese forget-me-not (<i>Cynoglossum amabile</i>)	18 – 20	65 – 68	No
Chinese lantern (<i>Physalis alkekengi</i>)	16 – 21	60 – 70	No
Chrysanthemum (<i>Chrysanthemum spp.</i>)	18 – 23	65 – 75	No
Clematis (<i>Clematis spp.</i>)	20 – 22	68 – 73	Yes
Cliquefoil (<i>Potentilla spp.</i>)	19-21	67-70	No
Cohosh (<i>Cimicifuga spp.</i>)	18 – 21	65 – 70	No
Columbine (<i>Aquilegia spp.</i>)	10 – 12	50 – 55	Yes
Common rockrose (<i>Helianthemum nummularium</i>)	21 – 24	70 – 75	No
Common sneezeweed (<i>Helenium autumnale</i>)	19 – 22	65 – 73	No
Coral bell (<i>Heuchera spp.</i>)	18 – 21	65 – 70	No
Corncockle (<i>Agrostemma githago</i>)	15 – 21	60 – 70	No
Cornflower (<i>Centaurea cyanus</i>)	15 – 21	60 – 70	No
Cosmos (<i>Cosmos bipinnatus</i>)	21 – 25	70 – 77	No

Cup and saucer vine (<i>Cobaea scandens</i>)	21 – 23	70 – 75	No
Cupflower (<i>Nierembergia</i> <i>spp.</i>)	21 – 23	70 – 75	No
Cupid's bow (<i>Achimenes</i> <i>spp.</i>)	21 – 23	70 – 75	No
Cupid's dart (<i>Catananche</i> <i>caerulea</i>)	20 – 23	68 – 75	No
Cyclamen (<i>Cyclamen</i> <i>spp.</i>)	18 – 20	65 – 68	No
Dahlberg daisy (<i>Dyssodia</i> <i>tenuiloba</i>)	18 – 21	65 – 70	No
Dahlia (<i>Dahlia</i> <i>spp.</i>)	21 – 23	70 – 75	No
Delphinium (<i>Delphinium</i> <i>elatum</i>)	15 – 20	59 – 68	Yes
Echinacea (<i>Echinacea</i> <i>spp.</i>)	18 – 21	65 – 70	Yes
Edeiweiss (<i>Leontopodium</i> <i>alpinum</i>)	18 – 21	65 – 70	Yes
English daisy (<i>Bellis</i> <i>perennis</i>)	18 – 21	65 – 70	No
Evening primrose (<i>Oenothera</i> <i>spp.</i>)	21 – 26	70 – 80	No
Everlasting (<i>Helichrysum</i> <i>bracteatum</i>)	21 – 24	70 – 75	No
False sunflower (<i>Heliopsis</i> <i>spp.</i>)	21 – 23	70 – 73	No
Fan flower (<i>Scaevola</i> <i>aemula</i>)	20 – 22	68 – 71	No
Firecracker flower (<i>Crossandra</i> <i>infundibuliformis</i>)	21 – 27	70 – 80	No
Flax (<i>Linum usitatissimum</i>)	18 – 21	65 – 70	No
Fleabane (<i>Erigeron</i> <i>spp.</i>)	18 – 21	65 – 70	No
Floss flower (<i>Ageratum</i> <i>houstonianum</i>)	24 – 29	75 – 85	No
Forget-me-not (<i>Myosotis</i> <i>spp.</i>)	18 – 21	65 – 70	No

Foxglove (<i>Digitalis spp.</i>)	15 – 18	60 – 65	No
Garden heliotrope (<i>Heliotropium spp.</i>)	18 – 21	65 – 70	No
Gay feather (<i>Liatris spp.</i>)	18 – 21	65 – 70	Yes
Gazania (<i>Gazania spp.</i>)	15 – 18	60 – 65	No
Gerbera (<i>Gerbera spp.</i>)	21 – 23	70 – 73	No
Geum (<i>Geum spp.</i>)	18 – 21	65 – 70	No
Globeflower (<i>Trollius spp.</i>)	18 – 21	65 – 70	Yes
Glory of the snow (<i>Chionodoxa spp.</i>)	10 – 15	50 – 59	Yes
Gloxinia (<i>Sinningia speciosa</i>)	19 – 21	66 – 70	No
Goldencup (<i>Hunnemannia fumariifolia</i>)	19 – 21	66 – 70	No
Goldenrod (<i>Solidago spp.</i>)	20 – 22	68 – 71	Yes
Goldentuft (<i>Aurinia saxatilis</i>)	15 – 21	59 – 70	No
Hellebore (<i>Helleborus spp.</i>)	18 – 21	65 – 70	Yes
Hibiscus (<i>Hibiscus spp.</i>)	21 – 26	70 – 75	No
Hollyhock (<i>Alcea rosea</i>)	15 – 21	60 – 70	Yes
Iceland poppy (<i>Papaver nudicaule</i>)	18 – 24	65 – 75	Yes
Impatiens (<i>Impatiens spp.</i>)	21 – 23	70 – 73	No
Jacob's ladder (<i>Polemonium spp.</i>)	18 – 21	65 – 70	No
Laceflower (<i>Trachymene coerulea</i>)	18 – 21	65 – 70	No
Ladys purse (<i>Calceolaria spp.</i>)	21 – 23	70 – 73	No
Larkspur (<i>Consolida ambigua</i>)	10 – 12	50 – 55	Yes
Lavender (<i>Lavandula spp.</i>)	18 – 21	65 – 70	No
Leopard plant (<i>Ligularia spp.</i>)	18 – 21	65 – 70	No
Linaria (<i>Linaria spp.</i>)	12 – 18	55 – 65	Yes

Lisianthus (<i>Eustoma grandiflorum</i>)	22 – 23	72 – 73	No
Livingstone daisy (<i>Dorotheanthus bellidiformis</i>)	18 – 24	65 – 78	No
Lobelia (<i>Lobelia spp.</i>)	18 – 23	65 – 73	No
Love-lies-bleeding (<i>Amaranthus caudatus</i>)	20 – 28	68 – 82	No
Lupine (<i>Lupinus spp.</i>)	12 – 21	55 – 70	Yes
Madagascar periwinkle (<i>Catharanthus roseus</i>)	24 – 27	75 – 80	No
Marigold (<i>Tagetes spp.</i>)	21 – 23	70 – 73	No
Marshmallow plant (<i>Althaea officinalis</i>)	15 – 21	60 – 70	Yes
Mexican creeping zinnia (<i>Sanvitali procumbens</i>)	18 – 21	65 – 70	No
Mignonette (<i>Reseda odorata</i>)	12 – 14	53 – 57	No
Monkey flowers (<i>Mimulus spp.</i>)	15 – 21	60 – 70	No
Monk's hood (<i>Aconitum spp.</i>)	12 – 15	55 – 60	Yes
Morning glory (<i>Convolvulus spp.</i>)	20 – 21	68 – 70	No
Nasturtium (<i>Tropaeolum majus</i>)	15 – 18	60 – 65	No
Nemesia (<i>Nemesia spp.</i>)	12 – 18	55 – 65	No
Nemophila (<i>Nemophila spp.</i>)	12 – 15	55 – 60	No
Nigella (<i>Nigella damascena</i>)	15 – 18	60 – 65	No
Obedient plant (<i>Physostegia virginiana</i>)	18 – 21	65 – 70	No
Pansy (<i>Viola tricolor var. hortensis</i>)	15 – 23	60 – 73	No
Pearly everlasting (<i>Anaphalis margaritacea</i>)	18 – 21	65 – 70	No

Persian violet (<i>Exacum affine</i>)	21 – 24	70 – 78	No
Petunia (<i>Petunia spp.</i>)	18 – 23	65 – 73	No
Phlox (<i>Phlox spp.</i>)	15 – 18	60 – 65	No
Poppy (<i>Papaver spp.</i>)	15 – 20	60 – 68	Yes
Portulaca (<i>Portulaca spp.</i>)	21 – 26	70 – 80	No
Pride of Madeira (<i>Echium candicans</i>)	15 – 20	60 – 68	No
Primrose (<i>Primula spp.</i>)	15 – 18	60 – 65	Yes
Purple rock cress (<i>Aubrieta deltoidea</i>)	18 – 21	65 – 70	No
Queen Anne's lace (<i>Daucus carota</i>)	16 – 18	60 – 65	No
Rock cress (<i>Arabis spp.</i>)	18 – 21	65 – 70	No
Salvia (<i>Salvia officinalis</i>)	21 – 23	70 – 73	No
Satin flower (<i>Clarkia amoena</i>)	21 – 23	70 – 73	No
Shooting star (<i>Dodecatheon meadia</i>)	18 – 21	65 – 70	Yes
Sea holly (<i>Eryngium spp.</i>)	18 – 23	65 – 73	Yes
Shasta daisy (<i>Leucanthemum x superbum</i>)	18 – 21	65 – 70	No
Snapdragon (<i>Antirrhinum majus</i>)	18 – 23	65 – 73	Yes
Snow-in-summer (<i>Cerastium tomentosum</i>)	18 – 21	65 – 70	No
Speedwell (<i>Veronica spp.</i>)	18 – 24	65 – 75	No
Spider flower (<i>Cleome spinosa</i>)	21 – 23	70 – 73	Yes
Statice (<i>Limonium sinuatum</i>)	15 – 20	60 – 68	No
Stock (<i>Matthiola incana</i>)	15 – 18	60 – 65	No
Stoke's aster (<i>Stokesia laevis</i>)	21 – 24	70 – 75	No
Sunflower (<i>Helianthus spp.</i>)	21 – 23	70 – 73	No

Swan river daisy (<i>Brachyscome iberidifolia</i>)	21 – 24	70 – 78	No
Sweet pea (<i>Lathyrus odoratus</i>)	12 – 18	55 – 65	No
Trumpet flower (<i>Incarvillea spp.</i>)	18 – 21	65 – 70	No
Tweedia (<i>Oxypetalum coeruleum</i>)	18 – 21	65 – 70	No
Twinspur (<i>Diascia spp.</i>)	15 – 18	60 – 65	No
Verbena (<i>Verbena spp.</i>)	18 – 23	65 – 73	No
Viola (<i>Viola spp.</i>)	18 – 23	65 – 73	No
Virginian stock (<i>Malcolmia maritima</i>)	18 – 23	65 – 73	No
Wallflower (<i>Erysimum cheiri</i> , syn. <i>Cheiranthus cheiri</i>)	15 – 18	60 – 65	No
Wild indigo (<i>Baptisia spp.</i>)	18 – 21	65 – 70	No
Wishbone flower (<i>Torenia fournieri</i>)	21 – 23	70 – 75	No
Xeranthemum (<i>Xeranthemum annuum</i>)	24-35	75 – 95	No
Yarrow (<i>Achillea spp.</i>)	18 – 21	65 – 70	Yes
Yellow lotus (<i>Nelumbo lutea</i>)	21 – 24	70 – 78	No
Zinnia (<i>Zinnia spp.</i>)	21 – 23	70 – 73	No

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