

# Flower Growing Guide



Crop	Scientific Name	Days   Temperatures Germination	Transplanting   Direct Seeding Sowing & Growing	Plant Spacing	Hardiness	Harvest
<b>Ageratum</b>	<i>Ageratum houstonianum</i>	7-10 days 75-80°F (24-27°C)	<b>Transplant (recommended):</b> Sow 6-8 weeks before planting out. Transplant after danger of frost has passed.	<b>Direct seed:</b> Not recommended.	9-12"	Annual  Fresh: Flower spikes are ¾ open. Dried: Flowers completely open; hang. May be air-dried, but flower color often fades.
<b>Agrostemma</b>	<i>Agrostemma githago</i>	7-14 days 60-70°F (16-21°C)	<b>Transplant:</b> Sow 4-5 weeks before last frost. Sow at 2-3 week intervals until midsummer for continuous bloom.	<b>Direct seed (recommended):</b> As soon as the soil can be worked.	6-9"	Annual  Fresh: 1 to 2 flowers in a spray are open.
<b>Alyssum</b>	<i>Lobularia maritima</i>	8-10 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 4-5 weeks before planting out. Transplant out after danger of frost has passed.	<b>Direct seed:</b> Sow as soon as the soil can be worked.	6-8"	Zones 9-11  Edible flowers: Once flowers are open.
<b>Amaranthus</b>	<i>Amaranthus spp.</i>	7-10 days 70-75°F (21-24°C)	<b>Transplant:</b> Sow 4-6 weeks before planting out.	<b>Direct seed:</b> After danger of frost. Support advised.	12-15"	Annual  Fresh: When at least ¾ of the flowers on the inflorescence are open. Dried: Seed has begun to set and flowers feel firm.
<b>Ammi &amp; Daucus</b>	<i>Ammi/Daucus spp.</i>	12-16 days 60-65°F (16-18°C)	<b>Transplant:</b> Sow 4-6 weeks before planting out.	<b>Direct seed (recommended):</b> In early spring after last frost (sow in the fall in the South).	3-12"	Annual  80% of flowers in umbel are open and there is no hint of pollen shed.
<b>Ammobium</b>	<i>Ammobium alatum</i>	4-8 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 5-6 weeks before the last frost. Cover seed lightly.	<b>Direct seed:</b> Not recommended.	6-9"	Zones 9-10  Fresh or Dried: Cut before yellow centers show when flowers are half opened. Hang to dry. Blooms continue to open as they dry.
<b>Artemisia</b>	<i>Artemisia annua</i>	7-21 days 70-75°F (21-24°C)	<b>Transplant:</b> Sow 5-6 weeks before planting out.	<b>Direct seed:</b> Sow after danger of frost.	12-24"	Annual  Fresh or Dried: Once flower heads have developed on stems.
<b>Asclepias</b>	<i>Asclepias spp.</i>	14-21 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 7-9 weeks before last frost.	<b>Direct seed:</b> Can be direct sown in the fall or spring.	12-24"	Varies  ½ to ⅔ of flowers are open. If stems wilt after harvest, rehydrate in water for 24 hours. CAUTION: Milky sap may cause eye and skin irritation.

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<b>Aster, China</b>	<i>Callistephus chinensis</i>	10-14 days 70-72°F (21-22°C)	<b>Transplant (recommended):</b> Sow ⅜" deep into 72-cell flats or preferred seedling container 6-8 weeks before planting out. Heat and reduced daylength initiate flowering. Establish plantings early to avoid short stems.	<b>Direct seed:</b> Once soil temperature is 65-70°F (18-21°C). Provide support. Row cover or insect netting helps prevent the spread of Aster Yellows Virus by leafhoppers. Pinching not required.	6-12"	Annual	Fresh: Outside ray florets begin to open. Place immediately in water. Dried: When blooms are fully open.
<b>Atriplex</b>	<i>Atriplex hortensis</i>	7-14 days 68-72°F (20-22°C)	<b>Transplant:</b> Sow 4-6 weeks before last frost.	<b>Direct seed (recommended):</b> After last frost.	10-12"	Annual	Harvest fresh stems or when seed pods have matured. Hang to dry.
<b>Basil</b>	<i>Ocimum basilicum</i>	5-10 days 65-70°F (18-21°C)	<b>Transplant:</b> 6 weeks before last frost.	<b>Direct seed:</b> After last frost.	4-8"	Annual	Fresh: When flowers have begun to open.
<b>Bells of Ireland</b>	<i>Moluccella laevis</i>	12-21 days 65-68°F (18-20°C)	<b>Transplant:</b> Sow 6-8 weeks before planting out.	<b>Direct seed (recommended):</b> Early spring when soil is 50-60°F (10-16°C).	10-12"	Annual	Fresh: When flowers are ½ open and green. Dried: Bells are firm.
<b>Bupleurum</b>	<i>Bupleurum rotundifolium</i>	14-21 days 55-60°F (13-16°C)	<b>Transplant:</b> Sow into 128- or 72-cell plug flats or preferred seedling container 5-8 weeks before planting out.	<b>Direct seed:</b> Sow into cool soil for best results.	4-10"	Annual	Fresh: Flower heads begin to show color. Dried: Flowers completely open; hang to dry.
<b>Calendula</b>	<i>Calendula officinalis</i>	7-14 days 70°F (21°C)	<b>Transplant:</b> Sow 4-5 weeks before planting out.	<b>Direct seed (recommended):</b> After danger of frost, sow at a depth of ¼". Make 2-3 successive sowings 2-3 weeks apart for continuous blooms from summer to heavy frost.	6-12"	Annual	Fresh: Flowers ½ open. Edible: Flowers fully open.
<b>Campanula</b>	<i>Campanula medium</i>	7-14 days 65-68°F (18-20°C)	<b>Transplant (recommended):</b> Sow into 128-cell plug flats or preferred seedling container, 6-8 weeks before planting out. Light is required for germination but applying a fine layer of vermiculite or growing media on top of the seed will help to maintain the moisture levels needed for germination and dissolve the pellet coating. Bottom water or mist lightly to avoid displacing seeds and soil. Direct seeding is not recommended. NOTE: Plants should be started in fall, winter, or early spring. Daylength sensitive plants require short days during seedling development to ensure sufficient stem length and vegetative growth before flowering under long days. Fall-sown plants overwintered well in our unheated, Zone 5 tunnel trials, and bloomed in early June on very tall, vigorous plants. Winter-sown plants flowered in mid-June through early July on shorter plants in our spring tunnel trials.	<b>Direct seed:</b> Not recommended.	For single-stem cuts, 4-6". For multi-stem / well-branched plants, 10-12". Support recommended.	For cut flowers, best grown as an annual	Fresh: Harvest when 2-3 lower buds on a stem are open. Keep upright position to avoid stem bending.

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<b>Carthamus</b>	<i>Carthamus tinctorius</i>	10-14 days 68-72°F (20-22°C)	<b>Transplant:</b> Sow into 50-cell plug tray, or preferred seedling container, 4-5 weeks before planting out. Harden off and transplant out after danger of frost.	<b>Direct seed (recommended):</b> Sow after danger of frost. Cover seed lightly.	6-9"	Annual	Fresh: When flowers have begun to open and show color. Dried: Flowers are completely open.
<b>Celosia</b>	<i>Celosia spp.</i>	8-14 days 70-80°F (21-27°C)	<b>Transplant (recommended):</b> Sow into 72-cell flats or preferred seedling container 6-8 weeks before planting out. Light is required for germination; cover very lightly to hold seeds in place. Grow seedlings at 63-68°F (17-20°C). Harden off and transplant out after danger of frost.	<b>Direct seed:</b> Only in locations with a long growing season. Sow ¼" deep, after last frost. Pinching is recommended to encourage branching.	6-12"	Annual	Fresh or dried: Flowers fully developed and stems are firm at the base of the bloom. Hang to dry.
<b>Centaurea</b>	<i>Centaurea cyanus</i>	7-14 days 60-65°F (16-18°C)	<b>Transplant:</b> Sow 3-4 weeks before planting out.	<b>Direct seed (recommended):</b> Make 2-3 successive sowings for continuous blooms.	2-9"	Annual	Flowers are ¼ to ½ open.
<b>Cerinthe</b>	<i>Cerinthe major purpurascens</i>	5-21 days 65-85°F (18-29°C)	<b>Transplant (recommended):</b> Sow 6 weeks before last frost.	<b>Direct seed:</b> Sow seeds ¼" deep after last frost.	12-18"	Annual	Bracts darken to blue and flowers are purple.
<b>Clarkia</b>	<i>Clarkia spp.</i>	5-10 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 4 weeks before planting out.	<b>Direct seed:</b> As soon as the soil can be worked.	6-12"	Annual	Fresh: Once first set of blooms on the stem opens.
<b>Columbine</b>	<i>Aquilegia spp.</i>	21-28 days 70-75°F (21-24°C)	<b>Transplant (recommended):</b> Sow 8-10 weeks before last frost. Transplant out after last frost.	<b>Direct seed:</b> Sow once soil has warmed to 65°F (18°C).	10-15"	Zones 3-9	When half of the florets on a stem are open.
<b>Cosmos</b>	<i>Cosmos spp.</i>	7-10 days 68-72°F (20-22°C)	<b>Transplant:</b> Sow into 50-cell plug flats or preferred seedling container 5-7 weeks before planting out, covering seeds lightly. Harden off and transplant out after danger of frost.	<b>Direct seed:</b> Sow after last frost, once soil temperature is above 60°F (16°C), covering seeds lightly. Pinching encourages branching.	9-12"	Annual	Petals just opening, but not yet flattened. Deadheading is required to have blooms all summer.
<b>Craspedia</b>	<i>Craspedia globosa</i>	14-18 days 70-75°F (21-24°C)	<b>Transplant (recommended):</b> Sow 6-8 weeks before planting out. Cover seeds lightly.	<b>Direct seed:</b> Not recommended.	9-12"	Zones 8-11	Fresh: Flower heads are fully open and uniformly golden. Hang to dry.

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<b>Cress</b>	<i>Lepidium sativum</i>	2-5 days 55-65°F (13-18°C)	<b>Transplant:</b> Sow 4-6 weeks before planting out.		<b>Direct seed (recommended):</b> Sow as soon as soil can be worked. Cover seeds with ¼" soil. Thin when first true leaves appear.	2-6"	Annual	Fresh or dried: When seed pods have matured. Hang to dry.
<b>Cynoglossum</b>	<i>Cynoglossum amabile</i>	5-8 days 65-70°F (18-21°C)	<b>Transplant:</b> Sow 3-4 weeks before last frost.		<b>Direct seed:</b> Sow as soon as soil can be worked.	9-12"	Annual	½ the florets are open.
<b>Dahlia</b>	<i>Dahlia variabilis</i>	3-5 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 4-5 weeks before last frost.		<b>Direct seed:</b> After last frost when soil is 65-70°F (18-21°C), sow thinly, 2 seeds/ft, ¼" deep. Cover lightly but firmly. Keep surface moist until emergence. Thin to 9-12" after first true leaves appear.	9-12"	Annual	Before blooms are completely open.
<b>Delphinium</b>	<i>Delphinium spp.</i>	10-20 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 10-16 weeks before planting out. Support strongly advised.		<b>Direct seed:</b> Not recommended.	12-18"	Zones 3-7	¼ to ⅓ of flowers on stem are open. Place immediately in water.
<b>Dianthus</b>	<i>Dianthus spp.</i>	7-14 days 65-72°F (18-22°C)	<b>Transplant (recommended):</b> Sow 6-8 weeks before last frost.		<b>Direct seed:</b> Early spring when a light frost is still possible.	6"	Zones 6-8	10-20% of flowers in cluster or spray are open.
<b>Didiscus</b>	<i>Trachymene coerulea</i>	14-21 days 70-72°F (21-22°C)	<b>Transplant:</b> Sow 4-6 weeks before last frost.		<b>Direct seed (recommended):</b> After last frost. Successive sowing every 2-3 weeks, spring through summer.	6-12"	Annual	When ½ the flowers on the umbel have opened.
<b>Digitalis</b>	<i>Digitalis spp.</i>	14-21 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 10-12 weeks before planting out.		<b>Direct seed:</b> As soon as soil can be worked (only in areas with long growing seasons).	9-12"	Zones 4-8	Lower ⅓ of flowers have opened. Deadheading encourages additional blooms.
<b>Dusty Miller</b>	<i>Senecio cineraria</i>	7-10 days 72-75°F (22-24°C)	<b>Transplant (recommended):</b> Sow 8-10 weeks before last frost.		<b>Direct seed:</b> Not recommended.	9-12"	Zones 8-10	Fresh or Dried: Harvest once base of stems have become hard and woody. Hang to dry.
<b>Echinacea</b>	<i>Echinacea spp.</i>	10-15 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 8-10 weeks before planting out.		<b>Direct seed:</b> Sow in spring when soil is 65°F (18°C).	18-24"	Zones 3-10	Fresh Flowers: When petals are expanding. Dried Flowers: Hang to dry.
<b>Echinops</b>	<i>Echinops ritro</i>	14-21 days 65-75°F (18-24°C)	<b>Transplant (recommended):</b> Sow into 50-cell flats, or preferred seedling container, 6-8 weeks before planting out. Cover seeds enough to hold them in place, but not too deeply, as some light aids germination. Harden off and transplant outdoors once there is no danger of frost.		<b>Direct seed:</b> Sow once the soil temperature has reached at least 65°F. Cover seeds lightly with soil.	18-24"	Zones 3-9	Fresh Cut or Dried: Harvest when ½ to ¾ of the globe has turned blue. Hang to dry. If harvested too late, the globes will shatter.

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<b>Eryngium</b>	<i>Eryngium planum</i>	7-10 days 72-75°F (22-24°C)	<b>Transplant:</b> Sow 10-16 weeks before planting out.	<b>Direct seed:</b> Not recommended.	18-24"	Zones 3-8 Entire flower head and bracts turn blue or white.
<b>Eucalyptus</b>	<i>Eucalyptus spp.</i>	14-21 days 65-80°F (18-27°C)	<b>Transplant (recommended):</b> Sow into 128-cell flats or preferred seedling container 8-10 weeks before planting out.	<b>Direct seed:</b> Not recommended.	12-24"	Zones 9-11 After leaves start to feel leathery and stems are woody.
<b>Euphorbia</b>	<i>Euphorbia marginata</i>	10-14 days 65-75°F (18-24°C)	<b>Transplant:</b> Sow 4-6 weeks before last frost.	<b>Direct seed (recommended):</b> After last frost. Plant 3-4 successive sowings 2 weeks apart for continual summer harvest.	6-9"	Annual Cut stems when bracts are fully colored, but before flowers are fully open. NOTE: Milky sap may cause eye and skin irritation.
<b>Geranium</b>	<i>Pelargonium X hortorum</i>	7-10 days 70-75°F (21-24°C)	<b>Transplant (recommended):</b> Sow 7-9 weeks before planting out for 128 to 288-cell size or 9-11 weeks before planting out for larger cells or seedling containers.	<b>Direct seed:</b> Not recommended.	12-14"	Annual N/A
<b>Gomphrena</b>	<i>Gomphrena spp.</i>	5-14 days 70-78°F (21-26°C)	<b>Transplant:</b> Sow into 72-cell flats or preferred seedling container 6-8 weeks before planting outside. Cover lightly with ¼" growing media. Harden off plants and transplant out after danger of frost.	<b>Direct seed:</b> Not recommended.	6-12"	Annual Fresh: Flowers in color but before fully open. Dried: Flowers completely open; hang.
<b>Grasses, Ornamental 'Black Tip'/ 'Silver Tip'</b>	<i>Triticum/Triticosecale</i>	5-10 days 60-70°F (16-21°C)	<b>Transplant:</b> Not recommended.	<b>Direct seed:</b> 4 weeks before last frost date.	1-2"	Annual When heads are still green or awns begin to darken.
<b>Grasses, Ornamental 'Greater Quaking Grass'</b>	<i>Briza maxima</i>	7-14 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow ⅛" deep into 72-cell flats, or preferred seedling container, 5-7 weeks before planting out. Transplant out after danger of frost.	<b>Direct seed:</b> After danger of frost has passed.	9-12"	Annual Fresh Cut or Dried: Harvest when seed heads are mature but still green and before pollen shed. Seed heads harvested once they have shed pollen, or have turned a golden color, tend to shatter.
<b>Grasses, Ornamental 'Purple Majesty'</b>	<i>Cenchrus americanus</i>	10-14 days 65-70°F (18-21°C)	<b>Transplant:</b> Sow 6-8 weeks before last frost date.	<b>Direct seed:</b> Not recommended.	12"	Annual Just before pollen shed.
<b>Grasses, Ornamental 'Feathertop'</b>	<i>Cenchrus longisetus</i>	10-14 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 5-7 weeks before last frost.	<b>Direct seed:</b> After last frost.	12-18"	Zones 9-10 Fresh Cut or Dried: Just before pollen shed.

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Grasses, Ornamental 'Northern Sea Oats'	<i>Chasmanthium latifolium</i>	7-14 days 70°F (21°C)	<b>Transplant (recommended):</b> Sow 8-12 weeks before last frost date.	<b>Direct seed:</b> Not recommended.	12-18"	Zones 5-9  Fresh or Dried: When seed heads have matured but still show some green color. Heads might shatter if harvested once a dark copper color.
Grasses, Ornamental 'Hare's Tail Grass'	<i>Lagurus ovatus</i>	10-14 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow ¼" deep into cell trays or preferred seedling container, 5-7 weeks before last frost. Transplant outside after the last frost.	<b>Direct seed:</b> After last frost, only in warm climates with a long growing season.	9-12"	Zones 8-10  Fresh Cut or Dried: Harvest just before seed heads shed pollen and are still light-green in color. Seed heads harvested once they have shed pollen tend to shatter.
Grasses, Ornamental 'Savannah Grass'	<i>Melinis nerviglumis</i>	10-21 days 70-75°F (21-24°C)	<b>Transplant (recommended):</b> Sow into 72-cell flat or preferred seedling container, 6-8 weeks before planting out. Cover seeds with a thin layer of vermiculite to retain moisture and hold seeds in place. Light aids germination. Transplant out after danger of frost.	<b>Direct seed:</b> Not recommended.	9-12"	Zones 9-10  Fresh Cut or Dried: Harvest when seed heads have just opened and before pollen shed. Seed heads harvested once they have shed pollen tend to shatter.
Grasses, Ornamental 'Frosted Explosion'	<i>Panicum elegans</i>	7-14 days 60-64°F (16-18°C)	<b>Transplant:</b> Sow 5-6 weeks before planting out.	<b>Direct seed:</b> Not recommended.	10-12"	Annual  When flower spikes are fully opened.
Grasses, Ornamental 'Green Drops'	<i>Panicum violaceum</i>	7-14 days 65-70°F (18-21°C)	<b>Transplant:</b> Sow into 72 to 50-cell flats 4-6 weeks before planting out.	<b>Direct seed (recommended):</b> Sow ¼" deep; cover lightly.	3-12"	Annual  Fresh or Dried: When seed heads are still green or have darkened.
Grasses, Ornamental 'Highlander,' 'Lime Light Spray Millet,' 'Lowlander'	<i>Setaria italica</i>	7-14 days 70°F (21°C)	<b>Transplant:</b> Sow 4-6 weeks before last frost date.	<b>Direct seed (recommended):</b> After last frost.	½-1"	Annual  Fully open, but not yet fluffy.
Gypsophila	<i>Gypsophila elegans</i>	7-14 days 70-72°F (21-22°C)	<b>Transplant:</b> Sow 6-8 weeks before last frost.	<b>Direct seed (recommended):</b> After last frost.	8"	Annual  Harvest when 70-90% of the flowers in a spray are open.

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<b>Helipterum</b>	<i>Rhodanthe chlorocephala</i>	14-21 days 65-75°F (18-24°C)	<b>Transplant (recommended):</b> 6-8 weeks before last frost. Transplant out after danger of frost has passed.		<b>Direct seed:</b> Sow after last frost.	6-8"	Annual	Fresh or Dried: Before flowers are fully open. Flowers continue to open after cutting. Hang to dry.
<b>Hibiscus</b>	<i>Hibiscus acetosella</i>	3-5 days 70-76°F (21-24°C)	<b>Transplant (recommended):</b> Sow 6-8 weeks before planting out, covering seed lightly. Transplant out after danger of frost has passed.		<b>Direct seed:</b> Not recommended.	24-36"	Zones 8-9	Leaves are leathery, stems are firm and woody.
<b>Hyacinth Bean</b>	<i>Dolichos lablab</i>	5-12 days 65-70°F (18-21°C)	<b>Transplant:</b> Sow 4-6 weeks before planting out.		<b>Direct seed:</b> After danger of frost.	6-12"	Zones 9-10	Flowers: 80% of flowers on stem are open. Pods: When half on stem are shiny and firm. Edible flowers: Fully open.
<b>Kale, Ornamental</b>	<i>Brassica oleracea</i>	10-14 days 70-85°F (21-29°C)	<b>Transplant (recommended):</b> Sow 4-6 weeks before planting out.		<b>Direct seed:</b> Sow about 3 months before expected fall/winter frost. When 10-12" tall, remove lower leaves. Repeat 3 or 4 times.	4-6"	Annual	Kale should have a 6" head on a 24" stem with good coloring. Plants will begin to color once temperatures drop below 50°F.
<b>Larkspur</b>	<i>Consolida ajacis</i>	14-21 days 55°F (13°C)	<b>Transplant:</b> Sow into 72-cell plug flats or preferred seedling container 5-7 weeks before planting out.		<b>Direct seed (recommended):</b> ¼" deep (darkness is required for germination) in early spring for summer bloom or in fall for bloom the following year.	4-6"	Annual	Fresh: 2-3 basal flowers open on up to ½ of stem. Dried: flowers on stem are open but before petals drop.
<b>Lisianthus</b>	<i>Eustoma grandiflorum</i>	10-15 days 68-72°F (20-22°C)	<b>Transplant (recommended):</b> Sow into 288-cell or preferred, deep-cell seedling container, 12-13 weeks before planting out. Greenhouse production is highly recommended. Lisianthus can be quite difficult to grow. Refer to our <a href="#">Lisianthus Production Guide</a> for more extensive growing information.		<b>Direct seed:</b> Not recommended.	4-8"	Annual	When 1 or more of the flowers on a stem are open.
<b>Lupine</b>	<i>Lupinus spp.</i>	14-21 days 65-75°F (18-24°C)	<b>Transplant:</b> Sow 4-8 weeks before planting out. Seedlings can tolerate a light frost.		<b>Direct seed:</b> Cover seeds with ¼" soil or growing media as darkness aids gemination.	18-24"	Zones 4-8	80% of blooms on spike are open.
<b>Marigold</b>	<i>Tagetes spp.</i>	4-7 days 75-80°F (24-27°C)	<b>Transplant (recommended):</b> Sow into 72-cell flat or preferred seedling container 4-6 weeks before planting out, lightly covering seed. Transplant out after danger of frost.		<b>Direct seed:</b> Sow ¼" deep. Pinching encourages branching.	8-18"	Annual	Flowers are fully open but still have tight centers.

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<b>Matricaria</b>	<i>Tanacetum parthenium</i>	10-14 days 70°F (21°C)	<b>Transplant (recommended):</b> Sow 5-7 weeks before transplanting in either spring or fall.	<b>Direct seed:</b> As soon as soil can be worked.	8-12"	Zones 5-9  When flower cluster is $\frac{3}{4}$ open.
<b>Monarda</b>	<i>Monarda spp.</i>	10-14 days 68-72°F (20-22°C)	<b>Transplant (recommended):</b> Sow 7-9 weeks before planting out.	<b>Direct seed:</b> Cover seed lightly.	12-18"	Varies  Fresh: Almost completely open. Dried: Completely open. Hang to dry.
<b>Morning Glory</b>	<i>Ipomoea spp.</i>	5-14 days 65-75°F (18-24°C)	<b>Transplant:</b> Sow 3-4 weeks before planting out. Cover seed with $\frac{1}{4}$ " growing media. Light is not required for germination. Keep the soil surface moist. Harden off and transplant outside after danger of frost.	<b>Direct seed:</b> 1-2 weeks after last frost.	8-14"	Annual  N/A
<b>Nasturtium</b>	<i>Tropaeolum spp.</i>	7-14 days 60-65°F (16-18°C)	<b>Transplant:</b> Sow 3-4 weeks before planting out.	<b>Direct seed (recommended):</b> Sow $\frac{1}{2}$ -1" deep.	8-12"	Annual  Edible flowers: fully open. Edible leaves: at any time.
<b>Nicotiana</b>	<i>Nicotiana spp.</i>	7-14 days 72-78°F (22-26°C)	<b>Transplant (recommended):</b> Sow into 72-cell flats 5-6 weeks before planting out. Gently press seeds into growing media or cover lightly as light aids germination. Harden off and transplant out after last frost. Young plants benefit from pinching out the center stem to encourage branching. Germinates readily and flowers quickly once transplanted in the field; plants will yield multiple cuts over the season.	<b>Direct seed:</b> Not recommended.	12-18"	Annual  When about half the flowers on the stem are open. Stems are easy to clean but can leave a sticky residue on hands and harvest tools.
<b>Nigella</b>	<i>Nigella spp.</i>	10-14 days 60-65°F (16-18°C)	<b>Transplant:</b> Sow 4-6 weeks before planting out.	<b>Direct seed (recommended):</b> Sow 3-4 times every 2-3 weeks early in season for continuous flower/pod production.	2-9"	Annual  Fresh: Buds fully colored or pods have begun to develop. Dried: Seed pods firm.
<b>Orlaya</b>	<i>Orlaya grandiflora</i>	12-16 days 60-65°F (16-18°C)	<b>Transplant:</b> Sow 4-6 weeks before planting out. Tolerates dry soil.	<b>Direct seed (recommended):</b> Cover seeds lightly.	9-12"	Annual  Fresh: 80% of the flowers in the umbel are open. Dried: Once seed pods form.
<b>Petunia</b>	<i>Petunia X hybrida</i>	6-10 days 72-77°F (22-25°C)	<b>Transplant (recommended):</b> Sow 4-6 weeks before planting out for 128 to 288-cell size or 6-8 weeks before planting out for larger cells or seedling containers.	<b>Direct seed:</b> Not recommended.	12-24"	Annual  N/A

Crop	Scientific Name	Days   Temperatures Germination	Transplanting   Direct Seeding Sowing & Growing		Plant Spacing	Hardiness	Harvest	
<b>Phacelia</b>	<i>Phacelia tanacetifolia</i>	7-14 days 55-68°F (13-20°C)	<b>Transplant:</b> Not recommended.		<b>Direct seed (recommended):</b> Sow seed thinly in rows, 6 seeds per ft., ¼-¼" deep as soon as soil can be worked. For mass plantings or cover crop, sow at 3 oz./1,000 sq.ft. or 7 lb./acre. Germinates best when sown into cool soil. Keep soil surface moist until emergence. Make 2-3 successive sowings, 2 weeks apart, for continuous blooms through the season.	2-12"	Annual	Fresh: When flowers are just beginning to open.
<b>Phlox</b>	<i>Phlox drummondii</i>	5-10 days 60-65°F (16-18°C)	<b>Transplant:</b> Sow 4-6 weeks before last frost. Dislikes root disturbance. Carefully transplant outdoors when first true leaves appear.		<b>Direct seed (recommended):</b> As soon as soil can be worked.	8-12"	Annual	50% of the flowers are open.
<b>Poppy (California)</b>	<i>Eschscholzia californica</i>	14-21 days 60-65°F (16-18°C)	<b>Transplant:</b> Sow 2-3 weeks before last frost.		<b>Direct seed (recommended):</b> After last frost.	6"	Annual	N/A
<b>Poppy (Corn)</b>	<i>Papaver rhoeas</i>	14-21 days 60-75°F (16-24°C)	<b>Transplant:</b> Not recommended.		<b>Direct seed (recommended):</b> As soon as soil can be worked.	6-8"	Annual	When buds are swollen and showing color. Seal stem ends. Cut flowers last 2-4 days.
<b>Poppy (Icelandic)</b>	<i>Papaver nudicaule</i>	7-12 days 65-75°F (18-24°C)	<b>Transplant:</b> Sow into 128-cell or other small cell tray 6-8 weeks before transplanting.		<b>Direct seed:</b> Sow in early spring, fall, or winter. Iceland poppies grow best in cooler conditions – below 70°F.	6-12"	Zones 4-9	As the buds just begin to open and show a bit of color but before they fully expand. Place in clear water.
<b>Portulaca</b>	<i>Portulaca grandiflora</i>	3-5 days 71-79°F (22-26°C)	<b>Transplant (recommended):</b> Sow 4-6 weeks before planting out for 128 to 288-cell size or 6-8 weeks before planting out for larger cells or seedling containers.		<b>Direct seed:</b> Once soil temperature has reached 75°F (23°C) or above. Deadheading spent blooms is not required but does encourage plant health and maximum flowering.	8-12"	Annual	N/A
<b>Rudbeckia</b>	<i>Rudbeckia hirta</i>	8-14 days 68-72°F (20-22°C)	<b>Transplant (recommended):</b> Sow into 72 to 50-cell plug flats 5-7 weeks before planting out. Cover seed very lightly as light is needed for germination.		<b>Direct seed:</b> Cover seeds very lightly. Pinching not required. Reseeds.	12-18"	Zones 9-10. Best grown as an annual.	Before blooms are completely open. Deadheading increases bloom.
<b>Rudbeckia</b>	<i>Rudbeckia triloba</i>	7-10 days 70-75°F (21-24°C)	<b>Transplant:</b> Sow 5-7 weeks before planting out. Cover seed lightly.		<b>Direct seed:</b> Gently press seed into soil as soon as soil can be worked in early spring or fall. Pinching not required. Reseeds.	18-24"	Zones 3-9	When blooms are completely open.

Crop	Scientific Name	Days   Temperatures Germination	Transplanting   Direct Seeding Sowing & Growing		Plant Spacing	Hardiness	Harvest
<b>Salvia</b>	<i>Salvia farinacea</i>	5-12 days 75-78°F (24-26°C)	<b>Transplant:</b> Sow 6-8 weeks before planting out.	<b>Direct seed:</b> Sow in clumps of 3-4 seeds, ¼" deep.	10-14"	Zones 8-10	Bottom 3-4 flowers open.
<b>Salvia</b>	<i>Salvia viridis</i>	5-12 days 75-78°F (24-26°C)	<b>Transplant (recommended):</b> Sow into 72-cell flats, 5-7 weeks before planting out.	<b>Direct seed:</b> Cover seed lightly.	12-18"	Annual	Fresh: Harvest when bracts are fully colored. Dried: Harvest when colored bracts have stiffened a little. Hang to dry.
<b>Saponaria</b>	<i>Gypsophila vaccaria</i>	7-10 days 70°F (21°C)	<b>Transplant:</b> Sow 2-3 weeks before last frost.	<b>Direct seed (recommended):</b> When light frost is still possible.	2-9"	Annual	When 1-2 flowers in a spray are open.
<b>Scabiosa</b>	<i>Scabiosa caucasica</i>	10-12 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 6-8 weeks before planting out.	<b>Direct seed:</b> Not recommended.	12-18"	Zones 3-7	Flowers are at bud stage to half open.
<b>Scabiosa</b>	<i>Scabiosa spp.</i>	10-12 days 65-70°F (18-21°C)	<b>Transplant (recommended):</b> Sow 4-6 weeks before planting out.	<b>Direct seed:</b> Successive plantings every 2-3 weeks until late spring give the best quality flowers and pods. May require support.	9-15"	Annual	Flowers almost fully open or seed heads have formed and are still green.
<b>Scarlet Runner Bean</b>	<i>Phaseolus coccineus</i>	4-7 days 60-70°F (16-21°C)	<b>Transplant:</b> Sow 2-3 weeks before last frost.	<b>Direct seed:</b> After last frost. TIP: Nitrogen-fixing inoculant increases flower and bean yields. Trellis or other form of support necessary.	4-8"	Annual	Edible flowers: Plump buds or fully open flowers. Store buds in refrigerator 2-3 days on slightly damp towel in covered container. Use open flowers immediately.
<b>Snapdragon</b>	<i>Antirrhinum majus</i>	7-14 days 70-75°F (21-24°C)	<b>Transplant (recommended):</b> Surface-sow into 128-cell flats or preferred seedling container 8-10 weeks before planting out. Light is required for germination; cover just enough to hold seeds in place. Pinching is recommended if branching is desired.	<b>Direct seed:</b> Not recommended.	4-12"	Annual	Florets on lower ⅓-½ of the spike are open.
<b>Statice</b>	<i>Limonium spp.</i>	5-14 days 70°F (21°C)	<b>Transplant (recommended):</b> Sow into 50-cell flats or preferred seedling container 5-6 weeks before planting out. Light aids germination; cover just enough to hold seeds in place. Harden off plants and transplant out after danger of frost.	<b>Direct seed:</b> Not recommended.	8-12"	Annual	When the individual flowers are mostly open and showing color. Hang to dry.

Crop	Scientific Name	Days   Temperatures Germination	Transplanting   Direct Seeding Sowing & Growing		Plant Spacing	Hardiness	Harvest
<b>Stock</b>	<i>Matthiola incana</i>	7-14 days 65-75°F (18-24°C)	<b>Transplant (recommended):</b> Sow ¼" deep into 128-cell plug flats 5-6 weeks before transplanting out into the field or protected structure.	<b>Direct seed:</b> After danger of frost. Do not pinch plants. Succession-plant every 2 weeks for multiple harvests. Stock is a cool-weather crop. Spring and fall-blooming successions are optimal.	4-6"	Annual	½ to ⅓ the florets on stem are open.
<b>Strawflower</b>	<i>Helichrysum bracteatum</i>	7-10 days 70-75°F (21-24°C)	<b>Transplant (recommended):</b> Sow into 72-cell flats or preferred seedling container 4-6 weeks before planting out. Do not cover seed as light is required for germination. Harden off and transplant out after danger of frost.	<b>Direct seed:</b> Where summers are long. Once established, prefers well-drained soils and temps of 70-75°F (21-24°C). Plants may need support. Pinching is recommended to encourage uniform and productive branching.	10-12"	Annual	Fresh or Dried: Cut when 2-3 layers of petals have unfolded but before flower fully opens to reveal center.
<b>Sunflowers, Branching</b>	<i>Helianthus annuus</i>	7-14 days 70-75°F (21-24°C)	<b>Transplant:</b> Sow into 72 to 50-cell flats 2-3 weeks prior to planting out. Plants dislike root disturbance but sowing indoors and then transplanting the first crop outdoors can be a successful way to get first-early sunflowers. Pinching branching varieties is recommended to encourage branching and longer stems. Succession-sow every 2-3 weeks and/or plant multiple varieties for continued harvest.	<b>Direct seed (recommended):</b> After last frost, sow ½" deep.	18-24"	Annual	Fresh: Flowers are just beginning to open. Dried: Flowers are completely open. Hang or use silica gel.
<b>Sunflowers, Dwarf</b>	<i>Helianthus annuus</i>	7-14 days 70-75°F (21-24°C)	<b>Transplant:</b> Sow in final container 3-4 weeks prior to planting out. Dislikes root disturbance.	<b>Direct seed (recommended):</b> After last frost.	8-12"	Annual	Fresh: Flowers are just beginning to open. Dried: Flowers are completely open. Hang or use silica gel.
<b>Sunflowers, Perennial</b>	<i>Helianthus maximiliani</i>	14 days 70°F (21°C)	<b>Transplant:</b> Sow 8-10 weeks before last frost.	<b>Direct seed:</b> After last frost. Spreads rapidly. Divide every third year.	18-24"	Zones 3-9	When ¼ to ⅓ of the flowers on a stem are open.
<b>Sunflowers, Pollenless, Single-Stem</b>	<i>Helianthus annuus</i>	7-14 days 70-75°F (21-24°C)	<b>Transplant:</b> Sow into 72 to 50-cell flats 2-3 weeks prior to planting out. Plants dislike root disturbance, but sowing indoors and then transplanting the first crop outdoors can be a successful way to get first-early sunflowers. Do not pinch plants. Pinched single-stem sunflowers will produce low-quality blooms or no blooms at all. Succession-sow every 1-2 weeks and/or plant multiple varieties with varied days to maturity for continuous harvest.	<b>Direct seed (recommended):</b> After last frost, sow ½" deep.	4-6"	Annual	Fresh: Flowers are just beginning to open. Dried: Flowers are completely open. Hang or use silica gel.
<b>Sweet Peas</b>	<i>Lathyrus odoratus</i>	14-21 days 55-65°F (13-18°C)	<b>Transplant (recommended):</b> Sow ¼-½" deep (darkness is required for germination) into 72-cell flats or preferred deep-cell seedling container 4-5 weeks before planting out.	<b>Direct seed:</b> 2-3 seeds every 6", ¼-½" deep. Seedlings can tolerate a light frost. Pinch when 6-8" tall to encourage denser branching and more flowers. Trellis support is required.	4-8"	Annual	Half the flowers on a stem are open. Harvesting flowers increases blooms.

Crop	Scientific Name	Days   Temperatures Germination	Transplanting   Direct Seeding Sowing & Growing		Plant Spacing	Hardiness	Harvest
<b>Tithonia</b>	<i>Tithonia rotundifolia</i>	7-14 days 70-85°F (21-29°C)	<b>Transplant:</b> Sow 6 weeks before planting out. Tolerates poor soil.	<b>Direct seed (recommended):</b> Cover seeds lightly.	12-24"	Annual	Flowers 90-100% open. Stand in deep, warm water for several hours. Deadhead for longer bloom.
<b>Verbena</b>	<i>Verbena bonariensis</i>	14-28 days 60-86°F (16-30°C)	<b>Transplant (recommended):</b> Sow 8-12 weeks before planting out.	<b>Direct seed:</b> Not recommended.	18-24"	Zones 7-10	Outer 2-4 layers of flowers are open.
<b>Viola</b>	<i>Viola spp.</i>	4-7 days 62-68°F (17-20°C)	<b>Transplant:</b> Sow 7-9 weeks before planting out. Will tolerate a light frost.	<b>Direct seed:</b> Not recommended.	6-9"	Varies	Edible flowers: fully open. Cut flowers: stems are long and at least one bloom per stem is open. Deadheading encourages continuous blooms.
<b>Xeranthemum</b>	<i>Xeranthemum annuum</i>	7-14 days 65-75°F (18-24°C)	<b>Transplant (recommended):</b> Sow into 72-cell flats, or preferred seeding container, 5-8 weeks before planting out. Gently press seeds into soil or cover seed lightly as light aids germination. Harden off and transplant outdoors.	<b>Direct seed:</b> Sow after danger of frost, 2-6" apart. Keep soil moist until emergence. Thin seedlings to 6-12" apart.	6-12"	Annual	Fresh Cut or Dried: Harvest when flowers are fully opened and while color is still fresh and bright. Hang to dry.
<b>Yarrow</b>	<i>Achillea millefolium</i>	10-14 days 65-72°F (18-22°C)	<b>Transplant (recommended):</b> Sow into 72-cell flats, or preferred seeding container, 8-10 weeks before planting out. Light is required for germination.	<b>Direct seed:</b> Late spring, early summer, or fall.	12-24"	Zones 2-9	When pollen is visible on the flowers. Hang to dry.
<b>Zinnia</b>	<i>Zinnia spp.</i>	3-5 days 80-85°F (27-29°C)	<b>Transplant (recommended):</b> Sow into 72-cell flats or preferred seedling container 4 weeks before planting out. Cover seeds. A heat mat will help maintain an accurate temperature. Lower temperatures will result in slower germination: 5-7 days at 70-75°F (21-24°C).	<b>Direct seed:</b> Sow ¼" deep. Succession-sow/ plant every 2 weeks for prolonged yields of high-quality stems. Pinching of initial bud or bloom and subsequent deadheading is recommended to encourage strong branching and bloom production. Very sensitive to frost.	9-12"	Annual	Before completely open. Stem is firm from point of cut to just below the bloom.