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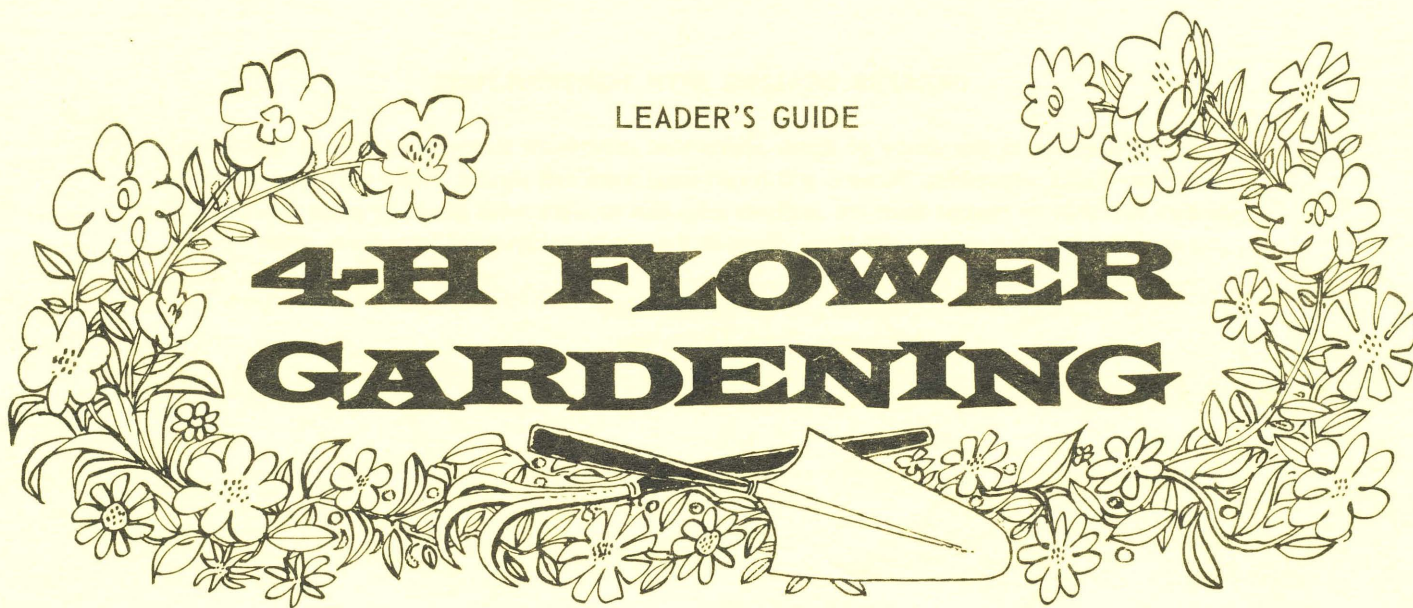
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LEADER'S GUIDE



# 4-H FLOWER GARDENING

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# 4 - H F L O W E R   G A R D E N I N G

## LEADER'S GUIDE FOR GROWING FLOWERS

J. Lee Taylor and Richard F. Stinson

### FOREWORD

This guide has been prepared for leaders working with flower garden projects. Its purpose is to help you do a better job of teaching your members. The objectives of the flower garden project and suggested project plans can be found in 4-H Bulletin 314A.1, Michigan Guide to 4-H Projects and Activities.

Briefly, a flower garden member starts the project by making a simple plan of a flower garden and by growing 4 to 7 different annual flowers. When the Novice Project is repeated, the member uses different annual flowers.

For an Intermediate Project, the member plans a garden using annuals and bulbs and grows 2 or more perennials, at least one bulb, and at least 7 or more annuals. Members may repeat the Intermediate Project if they grow at least 2 new perennials and at least one new bulb each succeeding year in addition to at least 7 annuals.

Advanced members plan a combination garden using annuals, bulbs, and perennials. They also plant and care for a combination garden which should include at least 7 annuals, 3 bulbs, and 6 perennials. Members may repeat this project if they grow at least 2 new perennials and at least one new bulb each succeeding year in addition to at least 7 annuals.

This leader's guide is concerned mainly with the planning, care and maintenance of a flower garden. Information on flower arranging is presented in Extension Bulletin 410, Flower Arranging Leader's Guide. Members should be allowed to exhibit either flower specimens or flower arrangements.

### PLANNING THE FLOWER GARDEN

Proper flower garden planning is very important, and some thought should be given to its development. The location will depend to a large extent on: land available; slope; exposure (sunny or shaded); size and shape of the lot; presence of large shade trees; relationship of the house and other buildings adjacent to the flower garden; and soil.

The first thing to do is to make a plan (drawn to scale) of the yard as it is. Second, decide where the flower garden will be. Third, figure out the color combination that you want to use in your garden. Although some people do not consider color as being important when planning a flower garden, you will probably have a more pleasing effect if you do decide to use colors that go well together. Some pleasing combinations are:

pink, yellow, and blue	violet and yellow
red, yellow, and blue	blue and orange
red, pink, and white	blue and white
pink, rose, and crimson	blue and yellow
yellow, bronze, and orange	yellow and orange

For additional color combinations, see Color in the Garden, page 3. Fourth, decide what plants to use, keeping in mind that the color, flowering period, and plant height is the information that you will use to plan your flower garden. Decide if the garden is to be an annual, perennial, or combination garden. Most gardens end up being combination gardens with annuals, perennials, and bulbs all being used. You may want to choose fragrant plants.

The correct spacing of plants should be given on seed packets or in catalogs. The planting distances for a few plants are listed below:

<u>6 Inches</u>	<u>12 Inches</u>	<u>18 Inches</u>	<u>24 Inches</u>	<u>36 Inches</u>
Dwarf Marigold	Petunias	Calendulas	Cosmos	Peonies
Portulaca	Phlox	Large Zinnias	Rudbeckia	Bleedingheart
Sweet Alyssum	Nasturtiums	Cleome	Daylily	Baby's Breath
	Snapdragons	Delphinium		Sunflower



First, read through the definitions until you understand them. Then look at the different types of harmonious color combinations (monochromatic, analagous, complimentary, and triads). It will be easier for you to understand the explanation of each type if you check the examples listed. Try to think of one or two other examples as you study each type.

Once you understand the color wheel, you will be in a better position to help your members plan their flower gardens.

### DEFINITIONS

Primary Colors - the colors that can be combined to give other colors. They are red, yellow, and blue. Red plus yellow gives orange, yellow plus blue gives green, and red plus blue gives violet.

Secondary Colors - the colors produced by combining the primary colors. The secondary colors are orange, green, and violet.

Tertiary Colors - the colors between the primary and secondary colors. Examples are green-yellow and yellow-green which are between yellow and green; blue-green and green-blue; violet-blue and blue-violet; red-violet and violet-red; orange-red and red-orange; and yellow-orange and orange-yellow.

Hue - a color at its greatest intensity. Yellow, green, blue, violet, red, and orange are hues.

Shade - a hue made darker by the addition of black.

Tint - a hue made lighter by the addition of white.

Tone - a hue made duller by the addition of gray.

### Harmonious Color Combinations

### Examples

Monochromatic - Using one color with its tints and shades

red, pink, maroon, and white

Analogous - Using colors side by side in the color wheel and related to each other through one of the primary colors

red and violet, red and orange, violet and blue, yellow and orange, yellow, orange-yellow and green-yellow, red, orange-red and violet red, blue, violet-blue, green-blue

Complimentary - Using colors that are opposite each other on the color wheel

Orange and blue, red and green, violet and yellow, orange-yellow and blue violet, red-orange and green-blue, blue, red-orange, and yellow-orange, yellow, red-violet, and blue-violet



Triads - Using any three colors that are of equal distance from each other

red, yellow, and blue;  
orange, green, and violet;  
yellow-green, red-orange, and  
blue-violet; orange-yellow,  
violet-red, and green-blue

## CULTURES OF ANNUALS

An annual is a plant that completes its growth in a single year. It grows from seed, flowers, produces seed, and dies in one year.

### Uses

Annuals may be used alone in a garden, in window boxes, in planting tubs, as temporary hedges and screens, and as vines. Annuals can also be used with other plants such as bulbs or perennials or both, in rock gardens, and in planters. Another use is for cut flowers.

### Culture

Most annuals do best in an open, well-drained, sunny location.

### Fertilizing

Apply 2 pounds of a complete fertilizer such as 6-12-12 per 100 square feet when the soil is worked in the spring. In early June, apply 4 pounds of 6-12-12 per 100 square feet. A soil test in the fall or spring is recommended. High nitrogen fertilizers should not be used because excessive vegetative growth would result.

### Watering

Annuals should be watered thoroughly at least once a week during the summer if there is not sufficient rain. Enough water should be added to thoroughly moisten the soil to at least 6 inches in depth. Young plants should be watered after they are transplanted.

### Cultivating and Mulching

Weeds can be controlled by cultivating or mulching. Many gardeners are finding that mulching is a much easier way to keep the weeds down than cultivating. Materials used as mulches include corn cobs, peat moss, buckwheat hulls, sawdust, wood chips, plastic film, and weed-free grass clippings.

### Planting Seeds and Transplanting

Seeds of most annuals can be sown outdoors around the middle of May in the East Lansing area. Follow the directions on the seed packet. Young plants can be set out in a garden at the same time.

Plants should be set out in the evening or on a cloudy day, if possible, so that the plants will have a chance to recover before being exposed to the hot sun. Plants should be set in the ground  $\frac{1}{2}$  to 1 inch deeper than they were before.

A starter solution should be used to provide the young plants with early nourishment. These water-soluble fertilizers are available in most garden supply stores.

### Buying Plants

If you buy plants, select healthy, bushy plants. Some plants, such as dwarf French marigolds, alyssum, petunias, and geraniums can be purchased in flower. Other plants, such as snapdragons, salvia, scabiosa, and zinnias, should not be in bloom when purchased.

### References

Bulletins: Growing Flowering Annuals, Home and Garden Bulletin No. 91.  
Superintendent of Documents, U.S. Government Printing Office,  
Washington, D.C. 20402

Beautiful Home Grounds, Extension Bulletin 425.  
Michigan State University, East Lansing, Michigan 48824

Books: The Complete Book of Annuals, F. F. Rockwell and E. C. Grayson,  
Doubleday and Company, Garden City, New York 11531

The Guide to Garden Flowers, N. Taylor. Houghton-Mifflin Company,  
2 Park St., Boston, Massachusetts 02107

### **STARTING ANNUAL SEEDS INDOORS FOR EARLIER OUTDOOR BLOOM**

Your garden can bloom a month to six weeks earlier by starting annuals indoors instead of sowing them outdoors in late spring.

The accompanying chart indicates the appropriate time for starting various kinds of annuals indoors in Central Michigan. For Southern Michigan, start one week earlier; for Northern Michigan, one week later.

Used milk cartons make excellent containers in which to start seeds. Each carton should be thoroughly rinsed, and cut lengthwise to give two equal-sized shallow boxes.

### Soil Mixture

Use a soil mixture of 1 part good garden soil and 1 part peat moss. Before using it should be pasteurized to eliminate destructive insects and diseases. This is easily accomplished by placing the well-mixed soil in a shallow baking pan, sprinkling it with 1 to 2 cups of water, covering it (aluminum foil may be used), and

baking it in an oven. Use the temperature and time for baking a medium-sized potato. When the soil has cooled, place it in the prepared milk cartons. Water the soil before sowing the seeds. The soil mixture could be prepared in the fall and stored in a dry place until used.

### Sowing Seeds

Two methods for sowing seeds are used, depending on the size of the seeds.

For large seeds, such as those of marigolds and zinnias, make holes in the soil about 1 inch apart with the point of a pencil. Two seeds should be placed in each hole. After all the seeds are in place, the soil is lightly firmed.

Fine seeds, (example: flowering tobacco), may be broadcasted over the soil surface, allowing about  $\frac{1}{4}$  inch space between seeds. The soil should not be firmed in this case. A very thin layer of soil mixture may be sifted over the seeds.

The seed boxes should then be properly labeled with the names of the plants so their identity will not later be lost.

Next, the seed boxes should be covered with plastic film to retain moisture while the seeds are germinating. Plastic bags in which some breakfast cereals are sold are just the right size in which to slide half of a two-quart milk carton. The open end should be folded under the seed box. An air-tight seal is unnecessary, but the plastic cover should completely enclose the box.

### Germination and Culture

Most flower seeds germinate best at a temperature of about 75°F. Light is not essential for germination of most of them.

The seedlings will begin to appear in about 3 to 14 days. The seed boxes should be checked daily for signs of life. As soon as germination starts, the plastic cover must be removed and the seedlings exposed to full sunlight. If the cover is left on for more than a few hours too long, spindly growth, which is very susceptible to "damping off" disease, will result.

Fertilizer applied at this time will give sturdy plants. Use any soluble "complete" fertilizer at half the strength recommended on the container. Two weeks later, and every two weeks thereafter, the same fertilizer should be applied at the rate recommended on the container.

"Damping off" may occur even in pasteurized soil under poor light and stagnant air conditions. This disease is evident when seedlings start falling over as a result of stems weakened at the soil line by the invasion of a fungus. The disease may spread throughout a seed box in two or three days if left uncontrolled.

### Watering

Careful attention to watering is essential in the starting of annuals indoors. They should never be allowed to dry to the point of wilting--This severely slows



the growth of the plants for several days following apparent recovery. When the soil feels dry to the touch, apply water. Do not water again until needed. Over-watering, which drives the air out of the soil, can be as fatal as no water at all!

### Thinning and Transplanting

After the "true" leaves appear above the "seedling leaves," the plants are ready for wider spacing. In the case of large-seeded annuals that were sown two seeds to a hole, the extra plants may be cut off at the soil line with a pair of shears to leave the remaining plants at a spacing of one inch. Fine-seeded plants that were sown broadcast should be carefully lifted out and transplanted to a spacing of one inch apart in additional boxes.

### Conditioning

On balmy spring days when the wind is calm, the young plants may be "hardened" for their final life outdoors by placing them outdoors in full sunlight for several hours. They dry rapidly under these conditions, so watch watering carefully.

### Final Transplanting

The young plants are ready for their final place in the flower garden when danger of frost is past (about May 20 in East Lansing). A good rule-of-thumb that may be used anywhere in Michigan is that it is safe to plant or set out annual flowers when the first Sugar Maple leaves are fully expanded.

### Sowing Dates for Home Grown Annuals in Central Michigan

Indoors	March 1 - Browallia, Cynoglossum, Petunia, Red Salvia, Verbena
	March 15 - Anchusa, Annual Chrysanthemum, Annual Delphinium, Annual Flax, Arctotis, Blue Salvia, China Aster, Dusty Miller, Flowering Tobacco, Forget-me-not, French Marigold, Garden Balsam, Gomphrena, Heliotrope, Nierembergia, Portulaca, Salpiglossis, Sanvitalia, Scabiosa, Sweet Alyssum, Thunbergia, Tithonia
	March 21 - Annual Phlox, Cleome, Gaillardia
	April 1 - Cockscomb
	April 15 - African Marigold, Bachelor Button, Calendula, Cosmos, Zinnia
Outdoors	April 1 - (as soon as ground thaws) - Anchusa, Bachelor Button, Browallia, Calendula, California Poppy, Cosmos, Cynoglossum, Flowering Tobacco, Hunnemannia, Larkspur, Petunia, Portulaca, Sweet Alyssum.
	May 15 - All others
Best Purchased	(require a long growing season) Tuberous-rooted Begonias, Geraniums, Snapdragons, Ageratum, Coleus, Dwarf Dahlias, Lobelia, Torenia, Vinca rosea.



Common Names and Scientific Names

Since many plants have more than one common name, the common and scientific names of plants will be given to avoid confusion. Some plants have over 200 common names!

The main advantage in using scientific names is that one, and only one, name is given to each kind of plant; and this single name is used all over the world. The first word in the scientific name is the genus and the second word is the species.

**ANNUALS FOR SPECIFIC CONDITIONS**

Annuals for Beginners

<u>Common Name</u>	<u>Scientific Name</u>
Ageratum	Ageratum houstonianum
Annual Phlox	Phlox drummondii
Calliopsis	Coreopsis tinctoria
Cockscomb	Celosia species
Cosmos	Cosmos hybrid
Marigold	Tagetes species
Nasturtium	Tropaeolum majus
Petunia	Petunia hybrida
Portulaca	Portulaca grandiflora
Spider Flower	Cleome spinosa
Sweet Alyssum	Lobularia maritima
Zinnia	Zinnia species

Annuals for Poor Soil

Balsam	Impatiens balsamina
Blue Woodruff	Asperula azurea setosa
Calliopsis	Coreopsis species
Cockscomb	Celosia argentea and cristata
Cornflower	Centaurea species
Four-o'clock	Mirabilis jalapa
Godetia	Godetia grandiflora
Ice Plant	Mesembryanthemum species
Love-lies-bleeding	Amaranthus species
Mentzelia	Mentzelia species
Morning Glory	Ipomoea species
Moss Verbena	Verbena pulchella
Nasturtium	Tropaeolum majus
Perilla	Perilla frutescens
Poppies	Papaver species
Portulaca	Portulaca grandiflora
Spider Flower	Cleome spinosa
Sweet Alyssum	Lobularia maritima

Annuals for Dry and Hot Conditions

<u>Common Name</u>	<u>Scientific Name</u>
Annual Phlox	Phlox drummondii
Baby's Breath	Gypsophila elegans
California Poppy	Eschscholtzia californica
Calliopsis	Coreopsis species
Cape Marigold	Dimorphotheca aurantiaca
Cockscomb	Celosia species
Creeping Zinnia	Sanvitalia procumbens
Cornflower	Centaurea species
Four-o'clock	Mirabilis jalapa
Ice Plant	Mesembryanthemum criniflorum
Poppy	Papaver species
Portulaca	Portulaca grandiflora
Sand-Verbena	Abronia umbellata
Scarlet Sage	Salvia splendens
Snow-on-the- mountain	Euphorbia marginata
Spider Flower	Cleome spinosa
Statice	Limonium species
Summer-cypress	Kochia scoparia
Sunflower	Helianthus annuus
Zinnia	Zinnia elegans
Zinnia linearis	Zinnia linearis

Annuals for Moist and Cool Conditions

Annual Canterbury Bells	Campanula medium
Annual Pink	Dianthus chinensis
Baby Blue-Eyes	Nemophila menziesii
Blue Laceflower	Trachymene caerulea
Blue Woodruff	Asperula azurea-setosa
Bugloss	Anchusa capensis
Candytuft	Iberis species
Flowering Tobacco	Nicotiana alata
Forget-me-not	Myosotis scorpioides
Mask Flower	Alonsoa species
Monkey Flower	Mimulus luteus
Nemesia	Nemesia species
Polygonum	Polygonum orientale
Pot Marigold	Calendula officinalis
Summer-Cypress	Kochia scoparia
Sweet Pea	Lathyrus odoratus
Verbena	Verbena hybrida
Wishbone Flower	Torenia fournieri

Annuals for Shade

For Shade or Full Sun

Balsam  
Forget-me-not  
Fibrous-rooted Begonias

Madagascar Periwinkle

Pansy  
Sweet Alyssum

Tufted Pansies

Impatiens balsamina  
Myosotis palustris semperflorens  
Begonia semperflorens - Pink Profusion,  
Lucifer, Stuttgart, Organdy Mixture,  
Paris Market Begonias  
Vinca rosea - Little Bright Eyes,  
Coquette, Rose Carpet  
Viola tricolor hortensis  
Lobularia maritima - Little Gem, Carpet of  
Snow, Royal Carpet, Rosie O'Day  
Viola cornuta - Chantreyland, Chinese Blue,  
Jersey Gem, Lutea Splendens,  
White Perfection

For Shade Only

Browallia  
Coleus  
Fibrous-rooted Begonias

Fuchsias  
Impatiens

Lobelia

Wishbone Flower

Browallia demissa - Major Blue, Sapphire  
Coleus blumei  
Begonia semperflorens - Snowbank, Carmen,  
Indian Maid, Sparkler, Blushing Baby  
Fuchsia hybrid  
Impatiens sultanii - Dwarf Bright Rose and  
Orange, Salmon Jewel, Pink Sprite,  
Pixie White  
Lobelia erinus compacta - Crystal Palace,  
White Lady, Sapphire, Rosamond  
Torenia Fournieri grandiflora and Torenia  
fournieri compacta

Annuals For Edging

Ageratum  
Annual phlox  
Candytuft  
Dianthus  
Dusty Miller  
Forget-me-not  
Lobelia  
Marigold  
Ice Plant  
Pansy  
Pimpernel  
Portulaca  
Sweet Alyssum  
Verbena

Ageratum houstonianum  
Phlox drummondii  
Iberis species  
Dianthus species  
Cineraria maritima  
Myosotis sylvatica  
Lobelia erinus compacta  
Tagetes species  
Mesembryanthemum sciniflorum  
Viola tricolor hortensis  
Anagallis indica  
Portulaca grandiflora  
Lobularia maritima  
Verbena hybrida

Annuals for Cut Flowers

African Daisy	Arctotis stoechadifolia
Annual Chrysanthemum	Chrysanthemum carinatum
Browallia	Browallia demissa
Calendula	Calendula officinalis
Calliopsis	Coreopsis tinctoria
China Aster	Callistephus chinensis
Clarkia	Clarkia elegans
Cornflower	Centaurea cyanus
Cosmos	Cosmos hybrid
Flowering Tobacco	Nicotiana sylvestris
Gaillardia	Gaillardia hybrid
Love-in-a-Mist	Nigella damascena
Marigold	Tagetes species
Mignonette	Reseda odorata
Pansy	Viola tricolor hortensis
Salpiglossis	Salpiglossis sinuata
Scabiosa	Scabiosa atropurpurea
Snapdragon	Antirrhinum majus
Stock	Matthiola incana
Verbena	Verbena hybrida
Zinnia	Zinnia species



ANNUAL FLOWERS - COLORS AND HEIGHTS

COLOR	Very Short to 6 Inches	Short 8-12 Inches	Medium 18-24 Inches	Tall 36 Inches or More
WHITE	Lobelia Portulaca Verbena Sweet Alyssum	Garden Balsam Impatiens (shade) Periwinkle (shade) Petunia Wax Begonia Wishbone Flower (shade)	Arctotis Bachelor Button Flowering Tobacco Larkspur Marigold (cream) Snapdragon White Laceflower Zinnia	Angel's Trumpet Cosmos Spider Flower Morning Glory, "Pearly Gates" (climber)
YELLOW	Dahlborg Daisy Golden Ageratum Portulaca	California Poppy Marigold Nasturtium	Annual Chrysanthemum Blanketflower Calendula Iceland Poppy Marigold Snapdragon Zinnia	Plume Cockscomb, "Golden Fleece"
ORANGE	Creeping Zinnia Gazania	California Poppy Cape Marigold Nasturtium Marigold Zinnia linearis	Annual Chrysanthemum Blanketflower Calendula Coreopsis Cosmos, "Fiesta" Marigold Zinnia	Tithonia, "Torch" Sunflower Gloriosa Daisy
RED	Annual Phlox, "Scarlet Ball" Annual Pink, "Wee Willie" Sweet Alyssum, "Rosie O'Day" Portulaca	Annual Pink, "Double Gaiety" and "Sweet Wivelsfield" California Poppy Cockscomb Cuphea, "Firefly" Garden Balsam Impatiens (shade) Nasturtium Periwinkle (shade) Petunia Salvia, "Fireball" Wax Begonia	Bachelor Button Blanketflower Flowering Tobacco Larkspur Marigold, (bronze-red) Salvia red Scarlet Flax Snapdragon Verbena Zinnia	Annual Hollyhock Cosmos Plume Cockscomb, "Forest Fire" Salvia Spider Flower
VIOLET	Cupflower Gomphrena, "Buddy" Lobelia Portulaca Sweet Alyssum Verbena	Garden Balsam Petunia Wishbone Flower (shade)	Heliotrope, "Marine" Salvia, "Violet Flame" Snapdragon Verbena Zinnia	Cosmos Spider Flower
BLUE	Ageratum Lobelia Verbena	Browallia "Major Blue" (shade) Petunia	Annual Delphinium Bachelor Button Blue Laceflower Blue Salvia Chinese Forget-me-not Larkspur Love-in-a-Mist	Morning Glory, "Heavenly Blue" (climber)

## CULTURE OF PERENNIALS

An herbaceous perennial is a permanent plant that dies to the ground each winter and resumes growth the following spring.

### Uses

Perennials can be used for naturalizing, for cut flowers, as fillers, screens, for extending the flowering season, and for giving a feeling of stability and permanence to the flower garden. Perennials can be used alone or with annuals and bulbs.

### Culture

Most perennials will do best in a well-drained, loamy soil which is high in organic matter.

### Propagation

Perennials are propagated by seeds, cuttings, and division. Perennials readily started from seed are:

Columbine	Gas Plant
Delphinium	Iceland Poppy
Chrysanthemum	Pansy
Canterbury Bells	Sweet William
Foxgloves	

A few perennials that can be propagated from cuttings taken in the spring and rooted in a mixture of sand and peat moss are:

Chrysanthemum	Aster
Delphinium	Goldentuft
Phlox	Dianthus

The most common method of propagating perennials is by division. Spring-flowering perennials should be lifted and divided in the fall. Fall-flowering perennials should be lifted and divided in the spring. Oriental poppies should be divided in August.

Perennials can be divided almost every year if you are interested in increasing the number of plants. Otherwise, they can be left undisturbed for years.

### Fertilizing

Apply 2 pounds of 6-12-12 per 100 square feet in April and 4 pounds of 6-12-12 in early June. For established plants, a handful of fertilizer at each application should be satisfactory.

### Watering

Perennials should be watered thoroughly once a week during the summer. Plants should also be watered thoroughly when they are set out.

## Mulching

Perennials should be mulched the first winter with straw to prevent heaving.

## References

Books: Complete Guide to Hardy Perennials, F. Perry. Charles T. Branford Company, 28 Union Street, Newton Center, Boston, Massachusetts 02159

## PERENNIALS FOR SPECIFIC CONDITIONS

### Perennials for Beginners

<u>Common Name</u>	<u>Scientific Name</u>
Aster	Aster species
Chrysanthemum	Chrysanthemum morifolium
Daylily	Hemerocallis hybrid
Iris	Iris species
Phlox	Phlox paniculata

### Perennials That Will Tolerate Poor Soil

Blood Red Cranesbill	Geranium sanguineum
Brown-eyed Susan	Rudbeckia laciniata
Butterfly Milkweed	Asclepias tuberosa
Evergreen Candytuft	Iberis sempervirens
Flowering Spurge	Euphorbia corollata
Goldentuft Alyssum	Alyssum saxatile
Grass Pink	Dianthus plumarius
Poppy Mallow	Callirhoe involucrata
Rock Phlox	Phlox subulata
Snow-in-summer	Cerastium tomentosum
Tickseed	Coreopsis grandiflora
Wallcress	Arabis albida
Wild Senna	Cassia marilandica

### Perennials for Dry and Hot Conditions

Beach Wormwood	Artemisia stelleriana
Blanketflower	Gaillardia aristata
Bugloss	Anchusa caespitosa
Butterfly Weed	Asclepias tuberosa
Common Gaura	Gaura lindheimeri
Coneflower	Rudbeckia speciosa
Cottage Pink	Dianthus plumarius
Cranesbill	Geranium sanguineum
Evening Primrose	Oenothera fruticosa
Evergreen Candytuft	Iberis sempervirens
Flax	Linum perenne

<u>Common Name</u>	<u>Scientific Name</u>
Flowering Spurge	<i>Euphorbia corollata</i>
Golden Marguerite	<i>Anthemis tinctoria</i>
Goldentuft Alyssum	<i>Alyssum saxatile</i>
Iris	<i>Iris germanica</i>
Moss Pink	<i>Phlox subulata</i>
Mullein	<i>Verbascum olympicum</i>
Pearl Everlasting	<i>Anaphalis margaritacea</i>
Poppy Mallow	<i>Callirhoe involucrata</i>
Sage	<i>Salvia pitcheri</i>
Snow-in-summer	<i>Cerastium tomentosum</i>
Tawny Daylily	<i>Hemerocallis fulva</i>
Tickseed	<i>Coreopsis grandiflora</i>
Wall Rockcress	<i>Arabis albida</i>
Wild Indigo	<i>Baptisia australis</i>
Wild Senna	<i>Cassia marilandica</i>
Wormwood	<i>Artemisia albula</i>
Yarrow	<i>Achillea millefolium</i>

Perennials That Will Tolerate Wet Soil

Astilbe	<i>Astilbe species</i>
Black Snakeroot	<i>Cimicifuga racemosa</i>
Buttercup	<i>Ranunculus acris flore-pleno</i>
Cardinal Flower	<i>Lobelia cardinalis</i>
Closed Gentian	<i>Gentiana andrewsi</i>
Common Rose Mallow	<i>Hibiscus moscheutos</i>
Fireweed	<i>Epilobium angustifolium</i>
Giant Groundsel	<i>Ligularia wilsoniana</i>
Globe Flower	<i>Trollius europaeus</i>
Goatsbeard	<i>Aruncus sylvester</i>
High or Giant Daisy	<i>Chrysanthemum uliginosum</i>
Ironweed	<i>Vernonia noveboracensis</i>
Japanese Iris	<i>Iris kaempferi</i>
Joe-Pye Weed	<i>Eupatorium purpureum</i>
Ligularia	<i>Ligularia clivorum</i>
Lobelia	<i>Lobelia siphilitica</i>
Loosestrife	<i>Lysimachia clethroides</i>
Marsh Marigold	<i>Caltha palustris</i>
Masterwort	<i>Astrantia major</i>
Meadow Sweet	<i>Filipendula palmata</i>
Plantain Lily	<i>Hosta species</i>
Purple Loosestrife	<i>Lythrum salicaria</i>
Japanese Iris	<i>Iris kaempferi</i>
Turtle Head	<i>Chelone lyonii</i>
Umbrella Plant	<i>Peltiphyllum peltatum</i>
White Turtle Head	<i>Chelone glabra</i>
Yellow Flag	<i>Iris pseudacorus</i>



Perennials for Shaded Locations

<u>Common Name</u>	<u>Scientific Name</u>
Astilbe	Astilbe species
Balloon Flower	Platycodon grandiflorum
Bleedingheart	Dicentra species
Bluebells	Mertensia virginica
Bugle	Ajuga reptans
Cardinal Flower	Lobelia cardinalis
Carpathian Harebell	Campanula carpatica
Christmas Rose	Helleborus niger
Columbine	Aquilegia hybrid
Coralbells	Heuchera sanguinea
Daylily	Hemerocallis hybrid
Hardy Foxglove	Digitalis ambigua
Hupui Anemone	Anemone hupehensis
Japanese Anemone	Anemone japonica
Meadowrue	Thalictrum
Monkshood	Aconitum species
Plantain Lily	Hosta plantaginea
Peachleaf Bellflower	Campanula persicifolia
Phlox	Phlox species
Snowdrop Anemone	Anemone sylvestris
Stonecrop	Sedum spurium
Wild Ginger	Asarum canadense
Woodruff	Asperula odorata

Perennials for Edging

Bugle	Ajuga reptans
Carpathian Bellflower	Campanula carpatica
Coralbells	Heuchera sanguinea
Evergreen Candytuft	Iberis sempervirens
Goldentuft Alyssum	Alyssum saxatile compactum
Grass Pink	Dianthus plumarius
Purple Rockcress	Aubrieta deltoidea
Rock Phlox	Phlox subulata
Snow-in-summer	Cerastium tomentosum
Tufted Pansy	Viola cornuta
Wallcress	Arabis albida

Perennials for Cut Flowers

Bellflower	Campanula hybrid
Blanketflower	Gaillardia hybrid
Chrysanthemum	Chrysanthemum morifolium
Columbine	Aquilegia hybrid
Coneflower	Rudbeckia species
Coralbells	Heuchera sanguinea
Coreopsis	Coreopsis grandiflora
Daylily	Hemerocallis hybrid
Delphinium	Delphinium hybrid
Gayfeather	Liatris pycnostachya

<u>Common Name</u>	<u>Scientific Name</u>
Globe Thistle	Echinops ritro
Iris	Iris species
Lupine	Lupinus hybrid
Pinks	Dianthus species
Plantain Lily	Hosta plantaginea
Pyrethrum	Chrysanthemum coccineum
Red-hot-poker	Kniphofia foliosa
Shasta Daisy	Chrysanthemum maximum
Sunflower	Helianthus annuus
Tufted Pansy	Viola cornuta

Perennials That Will Flower the First Year from Seed

Chinese Larkspur	Delphinium grandiflorum
Garden Chrysanthemum	Chrysanthemum morifolium
Grass Pink	Dianthus plumarius
Iceland Poppy	Papaver nudicaule
Mealycup Sage	Salvia farinacea (tender)

**WILDFLOWERS AND FERNS**

Wildflowers and ferns will enhance any garden. Most require little care. For the most part these are best obtained from a nursery or garden center; you are then sure of obtaining well-rooted specimens. The names and addresses of those specializing in wildflowers and ferns may be obtained in the classified advertising section in any of the popular gardening magazines. If you are fortunate enough to own a woodland, you may be able to transplant a few of them directly to your garden.

Most ferns require a moist, shady location as on the north side of a house and will lend interesting form and texture to your landscape. However many will do very well in partial or full sun.

The following is a small listing of some of the more familiar wildflowers and ferns. Those marked with an asterisk (\*) are protected by law in the State of Michigan and therefore should not be disturbed in the wild.

Nomenclature after Gray 1950.

References

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New York, N.Y. 10011

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Pocket Guide to Wildflowers, Samuel Gottscho, Pocket Books, Inc., Affiliated Publishers, Inc., 630 5th Ave., New York, N.Y. 10020

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### Wildflowers

<u>Common Name</u>	<u>Scientific Name</u>	<u>Natural Habitat</u>	<u>Season</u>
May-apple	Podophyllum peltatum	Rich woods	May and June
Trillium*	Trillium species	Open woods	May and June
Dutchman's Breeches	Dicentra cucullaria	Rich woods	May and June
Bloodroot	Sanguinaria canadensis	Rich open woods	April and May
Wild Ginger	Asarum canadense	Rich woods	April and May
Violets	Viola species	Woods and grassland	May and June
Jack-in-the-pulpit	Arisaema triphyllum	Moist woods	April - June
Spring Beauty	Claytonia virginica	Rich moist woods	April - June
Trout Lily	Erythronium americanum	Moist woods	May and June
Hepatica	Hepatica americana	Upland woods	April - June
Virginia Bluebells	Mertensia virginica	Rich moist woods	May
Trailing Arbutus*	Epigaea repens	Dry woods	April and May
Wild Columbine	Aquilegia canadensis	Woodland clearings	June and July
Blue Phlox	Phlox divaricata	Open woods	May and June
Lady's Slipper* (yellow)	Cypripedium calceolus	Moist woods	May
Wind Flower	Anemonella thalictroides	Open woods	May and June
Wild Geranium	Geranium maculatum	Woods, meadows	May and June
Butterfly Weed	Acelepias tuberosa	Dry, open land	July and August
Chicory	Cichorium intybus	Fields & roadsides	June - October
Goldenrod	Solidago canadensis	Meadows, roadsides	July - October
New England Aster	Aster novae-angliae	Fields, roadsides	July - October
Black-eyed Susan	Rudbeckia serotina	Fields, roadsides	July - October
Bee Balm	Monarda didyma	Dry thickets	August
Ox-eye Daisy	Chrysanthemum leucanthemum	Meadows, roadsides	June - August
Cardinal Flower	Lobelia cardinalis	Swamps, wet sites	August & Sept.
Joe-Pye Weed	Eupatorium purpureum	Wet meadows	July - October
Gentians*	Gentiana species	Meadows, low woods	August & Sept.
Marsh Marigold	Caltha palustris	Wet meadows & stream banks	April & May
Pitcher Plant (insectivorous)	Sarracenia purpurea	Bogs	May & July
Sundew (insectivorous)	Drosera rotundifolia	Bogs, moist acid soils	June - August
Prickly Pear Cactus	Opuntia humifusa	Sandy & rocky areas	June & July

## Ferns

<u>Common Name</u>	<u>Scientific Name</u>	<u>Natural Habitat</u>	<u>Height</u>
Maidenhair Fern	Adiantum pedatum	Dry shade	1' - 2'
Cinnamon Fern	Osmunda cinnamomea	Moist woods	1' - 4'
Lady Fern	Athyrium filix-femina	Rich, moist, soil in sun	1' - 1½'
Ostrich Fern	Pteretis pensylvanica	Moist woodlands, sun or shade	2' - 6'
Interrupted Fern	Osmunda claytoniana	Moist woods, sun or shade	2' - 4'
Sensitive Fern	Onoclea sensibilis	Moist soil in sun	2' - 3'
Common Polypody	Polypodium virginianum	Dry rock ledges, partial shade	6" - 8"
Rattlesnake Fern	Botrychium virginianum	Rich woods in sun	1' - 2'
Christmas Fern	Polystichum acrostichoides	Rocky slopes	1' - 2'

## **CULTURE OF BULBS**

Plants to be included as bulbs are those hardy or non-hardy plants having an enlarged underground portion that serves as a storage organ.

### Use

Bulbs can be used for naturalizing, for cut flowers, in mixed borders with annuals and perennials, and in foundation plantings.

### Culture

Most bulbs will do best in a medium-sandy loam. The soil must have excellent drainage. Spring-flowering, hardy bulbs should be planted in the fall. Fall-flowering, hardy bulbs should be planted in the spring. Lilies are usually planted in August. Tender bulbs should be planted in spring after the soil has warmed up.

### Fertilizing

Bulbs should be fertilized in early June using 4 pounds of 6-12-12 per 100 square feet.

### Watering

Water thoroughly once a week unless there is sufficient rain.

### Mulching

Summer mulches conserve moisture and reduce the soil temperature. A summer mulch is necessary to grow good lilies. Good materials for mulches are pine needles, buckwheat hulls, sawdust, peat moss, and other materials. For a winter mulch, apply straw after the ground freezes, especially on lilies.



Removal of Tops

Tops should be removed after they turn brown. Bulbs can be lifted and replanted at this time.

Flowering Season and Planting Depth

<u>Season</u>	<u>Bulb</u>	<u>Planting Depth Inches*</u>	<u>Hardy or Tender**</u>
S	Bulbous Iris	3-4	H
	Camassia	3-4	H
P	Crocus	3-4	H
	Daffodil	6	H
R	Glory-of-the-Snow	3	H
	Grape Hyacinth	2	H
I	Guinea Hen Flower	3-4	H
	Netted Iris	3-4	H
N	Siberian Squill	2-3	H
	Snowdrop	3	H
G	Tulips	4-7	H
<hr/>			
S	Caladium	2-3	T
U	Canna	2	T
M	Dahlia	6	T
M	Gladiolus	4	T
E	Summer Hyacinth	3-4	T
R	Tuberose	1-2	T
	Tuberous-rooted Begonias	Surface	T
<hr/>			
A			
U	Autumn Crocus	3-4	H
T	Colchicum	4-5	H
U	Hardy Cyclamen	1-1½	H
M	Sternbergia	4	H
N			

\* The Planting Depth is the distance from the soil surface to the top of the bulb.  
\*\*Tender bulbs must be replanted annually.

References

Book: The Complete Book of Bulbs. F.F. Rockwell and Esther C. Grayson.  
The American Garden Guild and Doubleday and Company, Garden City,  
New York 11531

**BULBS FOR SPECIFIC CONDITIONS**

Bulbs for Beginners

Colchicum  
Daffodil  
Gladiolus  
Siberian Squill

Crocus  
Dahlia  
Grape Hyacinth  
Tulip

Bulbs for Moist Situations

Caladium  
Calla

Bulbs for Shade

Calla  
Camassia  
Grape Hyacinth  
Guinea Hen Flower

Siberian Squill  
Snowdrop  
Tuberous-rooted Begonia

Bulbs for Cut Flowers

Calla Lily  
Canna  
Daffodil  
Dahlia  
Gladiolus

Grape Hyacinth  
Iris  
Lily  
Siberian Squill  
Tulip

PLAN FOR A CONTINUOUSLY FLOWERING BORDER

(Using bulbs, perennials, biennials, and annuals)

Color scheme: Red, pink, and white

X = Space occupied by plants not in flower  
 XX = Space planted with two kinds of plants which are not in flower

APRIL

6'	XX	X	XX	XX	X	
	X	XX	X	XX	X	XX
	XX	Red Emperor Tulip	X	Red Emperor Tulip	X	
	X	Waterlily Tulip	X	Waterlily Tulip	XX	Waterlily Tulip
	White Crocus	XX	White Crocus	XX	White Crocus	

← 30' or more →

MAY

XX	X	XX	Pink Gas Plant	X	
X	Bleeding Heart	White Gas Plant	Bleeding Heart	X	Bleeding Heart
Rose Tulip	XX	X	XX	X	
X	Pink Iceland Poppy	Evergreen Candytuft	XX	Pink Tulip	XX
XX	XX	XX	XX	XX	

JUNE

Pink Foxglove	Rose Peony	White Oriental Poppy	XX	Pink Delphinium	
Red Peony	Pink Balloon Flower	X	Pink Balloon Flower	Rose Peony	XX
XX	XX	Pink Astilbe	XX	Red Astilbe	
Red Astilbe	Pink Iceland Poppy	X	XX	Pink Iceland Poppy	XX
Pink Alyssum	Pink Alyssum	White Alyssum	Pink Alyssum	Pink Alyssum	

**JULY**

Pink Hollyhock	X	White Spider Flower	XX	Pink Delphinium	
X	Pink Balloon Flower	X	Pink Balloon Flower	X	Red Flowering Tobacco
Red Flowering Tobacco	XX	X	XX	X	
X	Pink Iceland Poppy	X	White Petunia	Pink Iceland Poppy	Scarlet Flax
Pink Alyssum	Pink Alyssum	White Alyssum	Pink Alyssum	Pink Alyssum	

**AUGUST**

Pink Hollyhock	X	White Spider Flower	Rubrum Lilly	Pink Delphinium	
X	Pink Balloon Flower	X	Pink Balloon Flower	X	Red Flowering Tobacco
Red Flowering Tobacco	XX	X	XX	X	
X	Pink Iceland Poppy	X	White Petunia	Pink Iceland Poppy	Scarlet Flax
Pink Alyssum	Pink Alyssum	White Alyssum	Pink Alyssum	Pink Alyssum	

**SEPTEMBER**

X	X	White Spider Flower	XX	Pink Delphinium	
X	Pink Balloon Flower	X	Pink Balloon Flower	X	Red Flowering Tobacco
Red Flowering Tobacco	Pink Chrysanthemum	X	Pink Chrysanthemum	X	
X	Pink Iceland Poppy	X	White Petunia	Pink Iceland Poppy	Scarlet Flax
Pink Alyssum	Colchicum & Pink Alyssum	White Alyssum	Colchicum & Pink Alyssum	Pink Alyssum	



SUCCESSION OF BLOOMING IN THE FLOWER GARDEN  
WITH SELECTED HARDY PLANTS

APRIL

Flowering Period	Name	Color	Height	Type
Early and mid-April	Snowdrop	white	8"	bulb
Early and mid-April	Netted Iris	purple	6"	bulb
Early and mid-April	Crocus	white yellow lavender purple	4"	bulb
Early and mid-April	Glory of the Snow	lavender	8"	bulb
Early and mid-April	Siberian Squill	blue white	8"	bulb
Mid-April to October	Pansy	various	6"	biennial
Mid-April to October	Tufted Pansy	various	6"	perennial
Mid-April to mid-May	Sweet Violet	purple pink	6"	perennial
Late April to late May	Ground Phlox	pink, blue, white	4"	perennial
Late April to late June	English Daisy	red, pink, white	6"	biennial
Late April to early June	Cranesbill	purple	18"	perennial
Late April to mid-May	American Grape Hyacinth	blue	8"	bulb
Mid-April to mid-May	Daffodil	various & bicolors	12"	bulb
Mid-April to mid-May	Red Emperor Tulip	red	8"	bulb
	Peacock Tulip	various	8"	bulb
	Waterlily Tulip	cream	8"	bulb

MAY

Early and mid-May	English Primrose	yellow, pink	8"	perennial
Early and mid-May	Bleedingheart	pink	36"	perennial
Early May to Oct.	Fringed Bleedingheart	pink, cream	12"	perennial
Early to late May	Evergreen Candytuft	white	16"	perennial
Early May to Oct.	Siberian Wallflower	orange	12"	biennial
Mid-May to October	Garden Pink "Caprice"	pink	12"	perennial
Late May to Oct.	Double Cluster Pink	red	12"	perennial
Late May to mid-July	Sweet William	red, pink, white	6" & 12"	biennial
Late May to Oct.	Blue Phlox	blue	36"	perennial
Late May to early June	Gas Plant	white, pink	36"	perennial

Flowering Period	Name	Color	Height	Type
Early May to late May	Goldentuft Alyssum	gold	12"	perennial
Late May to mid-July	Columbine	blue, pink, yellow, white	36"	perennial
Early May to late June	Sea Pink	rose pink	8"	perennial
Late May to early August	Jupiter's Beard	pink	18"	perennial
Late May to early June	Cheddar Pinks	pink	8"	perennial
Late May to Oct.	Daylily (Hemerocallis) (each variety flowers for about 4 weeks)	red, orange, yellow, cream	2'-4'	perennial
Mid-May to early August	Coralbells (Heuchera)	red, pink, white	18"	perennial
Late May to Oct.	German (Bearded) Iris (each variety flowers for about 3 weeks)	various	18"-5'	perennial
Early to late May	Dwarf Iris (certain varieties flower again in August)	various	6-12"	perennial
Late May to late June	Siberian Iris	blue, purple, white	30"	perennial
Late May to late June	Lupine	pink, blue, purple, white	6'	perennial
Late May to late July	Perennial Forget-me-not	blue, pink, white	6"	perennial
Late May to Oct.	Catmint	lavender	12"	perennial
Late May to mid-June	Star-of-Bethlehem	white	6"	bulb
Late May to early June	Peony	red, pink, white	24-36"	perennial
Early to late May	Phlox divaricata	blue	12"	perennial
Early May to early June	Garden Tulips (each variety in bloom about 2 weeks)	various	12-48"	bulbs
Late May to early June	Veronica "Spades Blue"	blue	4"	perennial
<u>JUNE</u>				
Mid-June to Oct.	Hardy Margarett	yellow	24"	perennial
Late June to mid-July	Butterfly Weed	orange	24"	perennial
Late June to mid-July	Astilbe	red, pink, white	24-36"	perennial
Late June to Oct.	Carpathian Bellflower	blue	6"	perennial
Early June to Oct.	Cupid's Dart	lvd. blue	18"	perennial
Early and late June	Painted Daisy	rose, pink	24"	perennial
Early June to late July	Shasta Daisy	white, cream	24"	perennial
Mid-June to October	Perennial Coreopsis	yellow	24"	perennial

Flowering Period	Name	Color	Height	Type
Mid-June to October	Delphinium	purple, blue, white, pink,	6'	perennial
Early June to late July	Foxgloves	pink, lavender, purple, cream	7'	biennial
Early June to Oct.	Blanketflower	red, yellow, red & yellow	24"	perennial
Late June to Oct.	Geum	red, yellow	24"	perennial
Late June to mid-August	Perennial Sunflower "Golden-Greenhart"	gold	36"	perennial
Early and mid-June	Bulbous (Dutch) Iris	blue, yellow	30"	bulb
Late June to Oct.	Red-hot-poker (trifle tender)	red, orange, yellow, white	18-48"	perennial
Early June to Oct.	Yellow Phlox	yellow	12"	perennial
Late June to late August	Lythrum "Morden Pink"	pink	6'	perennial
Early June to late August	Hybrid Lilies (each var. in bloom from 4-6 weeks)	various	12"-6'	bulbs
Late June to late July	Bee Balm	red, pink	36"	perennial
Late June to early August	Evening Primrose	yellow	24"	perennial
Early June to late August	Garden Phlox	red, pink, purple, blue, white	12-48"	perennial
Early June to early August	Brown-eyed Susan	orange	24-36"	perennial
Late June to Oct.	Salvia superba "Purple Glory"	purple	24"	perennial
Early June to Oct.	Blue Salvia (Salvia patens) (trifle tender)	blue	5'	perennial
Mid-June to mid-Sept.	Hardy Pincushion Flower	blue, pink, white	3'	perennial
Mid-June to mid-July	Globeflower	orange, yellow	5'	perennial
Mid-June to mid-July	Madonna Lily	white	6'	bulb
Early June to early July	Canterbury Bells	purple, blue, rose, pink, white	24"	biennial
<u>JULY</u>				
Early July to late August	Hollyhock	red, pink, yellow, white	6-8'	biennial
Late July to Oct.	Garden Chrysanthemum	various	12-36"	perennial
Mid-July to Sept.	Coneflower	purple, red, orange	5'	perennial
Early July to Oct.	Mallow	red, pink, white	6'	perennial
Early July to Oct.	Globe Thistle	steel blue	5'	perennial
Early to late July	Baby's Breath "Bristol Fairy"	white	3'	perennial
Early July to Oct.	Pink Japanese Anemone	pink	48"	perennial
Early July to late August	True Lavender	lavender	18"	perennial

Flowering Period	Name	Color	Height	Type
Mid-July to mid-Sept.	Kansas Gayfeather (sandy soil)	lavender-blue	5'	perennial
Mid-July to mid-Oct.	Cardinal Flower	red	6'	perennial
Early July to Oct.	Balloon Flower	blue, pink, white	24"	perennial
Early July to late August	Stokes Aster	lavender	24"	perennial
Late July to late August	Veronica "Wheaton"	blue	18"	perennial
Mid-July to late August	Veronica "Icicle"	white	18"	perennial
<u>AUGUST</u>				
Late Aug. to Oct.	Monkshood "Sparks"	dark blue	6'	perennial
Early Aug. To mid-Sept.	Rubrum Lily	pink, red, spots	5'	bulb
Early to late Aug.	Hardy Ameryllis	pink	18"	bulb
<u>SEPTEMBER</u>				
Early Sept. to late October	New England Aster	pink, blue, white, purple	12-48"	perennial
Early Sept. to late October	White Japanese Anemone	white	48"	perennial
Early Sept. to late October	Autumn "Crocus" (Colchicum)	lavender-pink, white	6"	bulb
<u>OCTOBER</u>				
Early to late Oct.	Arctic Chrysanthemum	pink, yellow, white	24"	perennial



## EXHIBITING SPECIMEN BLOOMS

By Mrs. W. J. Ullenbruch  
National Chairman, Flower Show Schools  
Woman's National Farm and Garden Association

The first thing for an exhibitor to do is to STUDY THE SCHEDULE; learn the rules governing the class or classes you plan to enter.

These are the things a judge considers in choosing blue ribbon winners:

### I. Form or Shape:

A. Individual blooms (such flowers as dahlias, roses, peonies, daisies, marigolds, zinnias, pansies, chrysanthemums, etc.)

1. Merits: Even spacing and length of petals; good development in head, or crown; good placement of flower on stem; evenly spaced foliage, flower at right stage of opening.
2. Faults: Irregular or unequal length of petals; one-sided or lopsided shape; voids in the face of the flower; underdeveloped, or overdeveloped, or poorly-formed centers; poor angle of placement of flower on stem; flower too far open or not open enough.

B. Spike: (such flowers as glads, delphinium, snapdragon, stock, lythrum, salvia, etc.)

1. Merits: Even spacing of florets on stem, and well faced; progressive opening of florets from bottom to tops; good proportion of open florets to buds; uniformity of size and development.
2. Faults: Uneven spacing and facing, voids, or overcrowding; too few open florets; buds too tight, or immature; tips broken or bent; shape clubby; presence of side shoots--especially in glads (side shoots should be removed).

II. Substance and Texture: Substance is the tissue and cell structure, thick or thin, fine or coarse, rough or smooth. Texture is the surface quality--dull or shiny, velvety or satiny, smooth or downy.

A. Merits: Firm, crisp, fresh, turgid, even throughout.

B. Faults: Limp, soft, crepy, uneven substance.

### III. Color:

A. Merits: Clear, clean, bright, fresh, pure, uniform.

B. Faults: Muddy, cloudy, sun-faded or scorched; discolored or streaked by disease; blues in red and pink flowers, green tinge in yellow flowers, soiled or dirty effect in whites.

- IV. Foliage and Stem: All specimens in a show must have natural foliage on the flower stem--except for scapes (leafless flower stalks such as day-lily for example) which must have own foliage accompanying the flower.
- A. Merits: Stem straight and strong, long enough to support the flower head proportionately. In spikes, the tips must be straight. Foliage should be a clear green, well placed on the stem. Lower foliage should be removed (lower one-third).
- B. Faults: Weak, crooked, or bent stems; weak, cracked, or twisted necks, stem tips crooked, bent, broken, or removed; foliage too crowded or sparse; leaves torn, broken, with disease or insect damage; spray residue; dull, dirty, or faded foliage.
- V. Condition: Good Grooming is very important. Both flowers and foliage should be very carefully cleaned with a soft brush, or a damp cloth. Use of oils to improve appearance is prohibited.
- A. Merits: Fresh, crisp, turgid flowers, at their peak of development; free from bruise or blemish, dust, dirt, spray residue, insect or disease damage.
- B. Faults: Faded, wilting, over or underdeveloped flowers; outer row of petals browning; water-spotting, notched, torn or bruised leaves or petals; dust, dirt, or insects; spray residue and damage from disease or pests; removal of lower florets. In glads, the lowest one floret may be very carefully removed.

#### Conditioning or Hardening

Proper conditioning of a specimen is essential if it is to remain fresh. This is done by filling it with water until the tissues can absorb no more, and the flower and leaves are crisp, or turgid. The following steps should be followed:

- I. Cutting:
- A. About twelve hours before show time. May be done in early morning, or late afternoon.
- B. Use a sharp knife, avoid mashing the stem. Straight or slant cut is immaterial.
- C. Strip the lower 1/3 to 1/2 of the leaves off.
- D. Stage: Just before the flower is fully developed. It will continue to open after cutting.
- II. Hardening:
- A. Plunge into hot water (90 to 110 degrees F) immediately after cutting, up to the flower head. You need not carry a bucket of hot water into the garden, but be sure to cut off the lower one-half to one inch of the stem just before plunging into hot water. This removes the air bubble that has formed in the stem during the time it takes to carry it from the garden to the house.

- B. Leave in the hot water until the flower is crisp, turgid, full of water. For most garden flowers, this takes about a half hour. Pour off the water to a level below the last row of foliage; put in a cool, dark place until ready to take to the show.
- C. Adding a flower preservative will help prolong flower life. Flower preservatives can be obtained from florists.
- D. EXCEPTIONS: Flowers that bleed, like the dahlia, should be immediately placed in ice water, for a short period (from five to fifteen minutes). This forms a seal and prevents the loss of the fluid, so carry a can of ice water with you. Then pour off the ice water, and fill the can with lukewarm water, up to the flower head. When the flower is turgid, pour off the water to below the level of the lowest leaf, and place in a cool, dark room.

#### Transporting and Grooming

Use a soft brush, or a damp cloth, and carefully remove all dust, dirt, spray residue from both flowers and foliage. Foliage may be gently rubbed to improve gloss, but no oiling is permitted. The stamens of lilies should be picked off, for pollen stains on the petals are a fault.

It is best to transport the specimens in water, though most garden flowers can be carefully packed in flat boxes without harm. Be sure to support the flower head, and do not pack too tightly, or crowd. Crushing must be avoided.

Protect the flower head by wrapping it lightly in florist's tissue, or polyethylene covering. Flowers that bruise easily, such as iris, should always be carried in an erect position.

Other flowers that must be carried in an erect position are those that will turn their tips upward if carried flat. This is especially true of glads, snaps, stock, and lythrum. Once the tips have curved, they cannot be returned to their original straightness. A six-pack container for carrying pop bottles also works for carrying flowers.

### **HORTICULTURE CONTEST**

A Horticulture Contest which includes flowers, fruits, ornamentals and vegetables is conducted at State Show for members who are enrolled in horticultural projects. A complete description of the contest can be obtained from the Department of Horticulture, Michigan State University, East Lansing, Michigan 48824.



## THE HORTICULTURAL GARDENS AT MICHIGAN STATE UNIVERSITY

### *Garden Areas*

**Rose Gardens.** The Floribunda Rose Garden and the Hybrid Tea Rose Garden comprise the larger of only two public rose gardens in the State of Michigan accredited by All-America Rose Selections, Inc. This means that many varieties about to be introduced may be seen in flower in these gardens before they are offered for sale to the public. Nearly 1,100 rose plants of about 170 varieties are on display.

**Combination Garden.** Perennial, biennial, annual, and bulbous plants are combined to give continuous color in this garden. A color scheme blending from red and purple at the south end of this garden to orange and blue at the north end demonstrates one way of combining colors in a garden.

**Perennial Garden.** Perennial and biennial flowers are used for continuous color in this garden. Some plants of special interest are

Oriental Poppies, Phlox, Daylilies, Delphinium, and Peonies.

**Annual Garden.** A garden devoted to non-hardy plants started each spring from seed. The varieties used vary from year to year and a different color scheme is used each season. Some plants often used in this garden are Petunias, Zinnias, Marigolds, Alyssum, and Snapdragons. A section is planted with annuals especially suitable for shade.

**Bulb Garden.** Hardy and non-hardy bulbous plants are on display in this garden. Some plants of special interest are new varieties of Hybrid Lilies, Hardy Amaryllis, Tuberous Begonias, and Autumn Crocus. Chrysanthemums are used to provide additional color in the fall.

**Water Garden.** Hardy and Tropical Waterlilies may be viewed in the pool in the

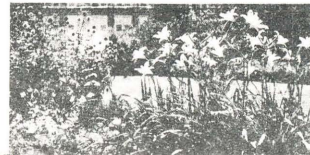
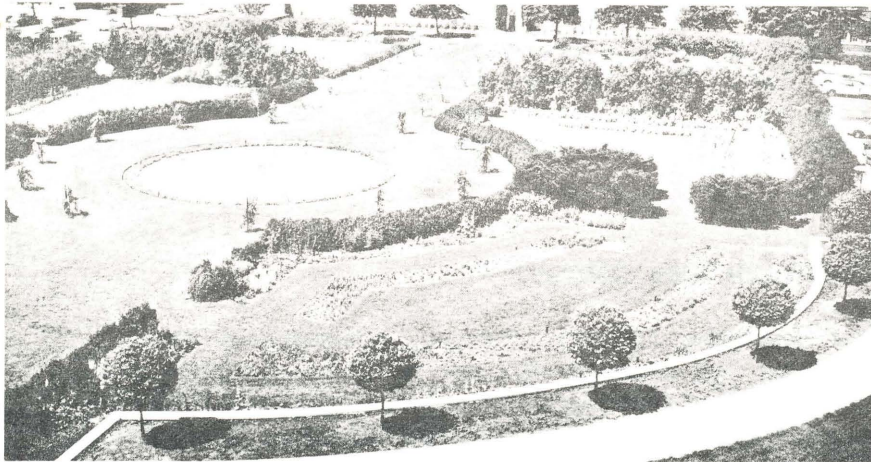
center of the Horticultural Gardens. Night-flowering Waterlilies, which remain open until late morning, are of special interest.

#### SEASONAL HIGHLIGHTS

Mid-April	Early spring bulbs
Mid-May	Late spring bulbs and early perennials
Mid-June	Roses, perennials
Mid-July	Annuals and Lilies
Mid-August	Dahlias and Waterlilies
Mid-September	Chrysanthemums and Autumn Crocus

Persons interested in pursuing a career in Horticulture may obtain information by writing to: Dr. Richard F. Stinson, Department of Horticulture, Michigan State University, East Lansing, Michigan.

### *Horticultural Gardens*



Photos by *The State Journal*



MICHIGAN  
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UNIVERSITY



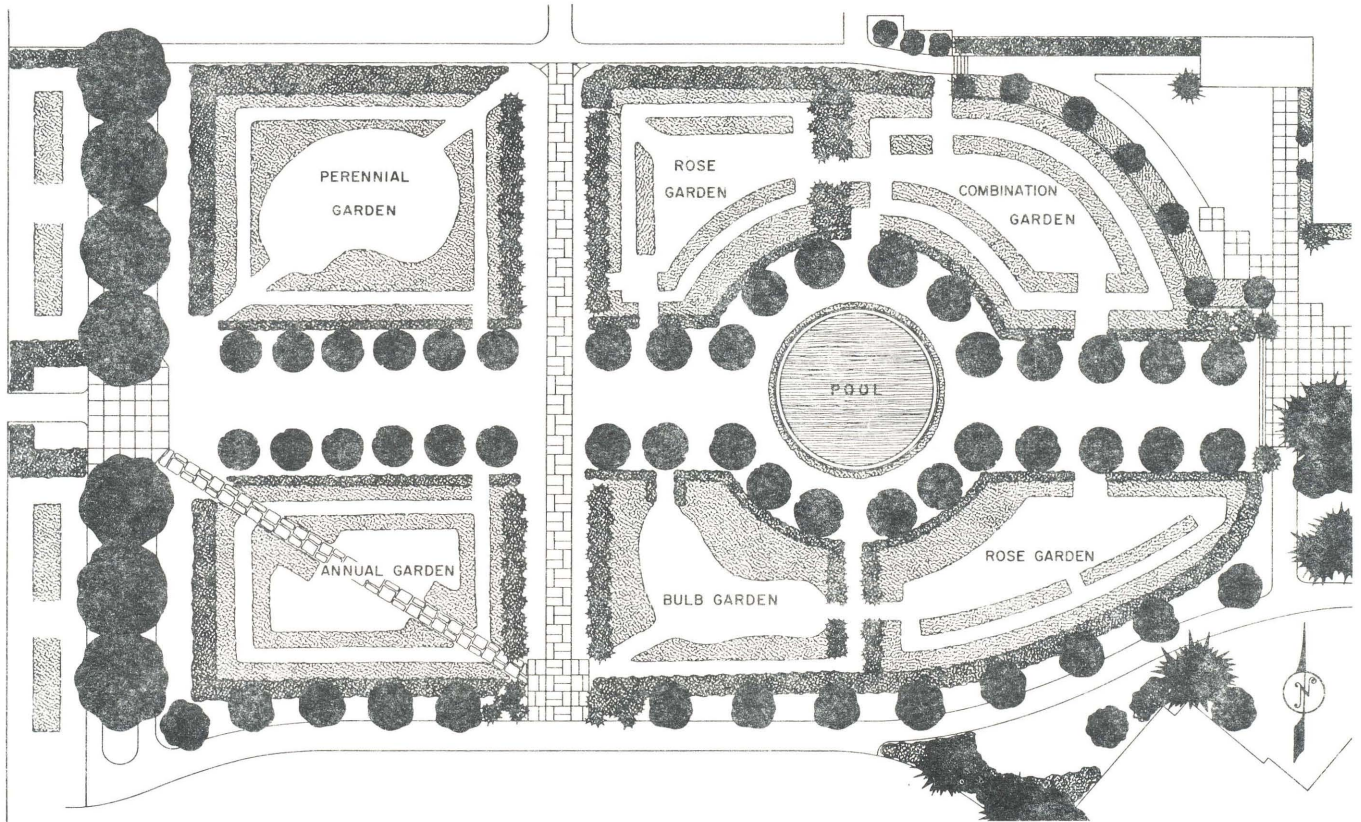
## Horticultural Gardens

THE HORTICULTURAL GARDENS, located at the center of the East Circle on the campus, are used for instructional and demonstrational purposes as well as for testing the performance of plants under central Michigan climatic conditions. These gardens extend a little over two acres and contain about 1000 varieties of flowering plants. This area was originally part of a field test plot for Horticultural crops and gradually evolved into its present

formal development about 1943; final structural changes were completed in 1958.

The gardens have been "color tuned" to provide examples of pleasing color combinations. Plant forms and flowering periods have been integrated to provide examples of satisfactory planting schemes. All plants are permanently labeled with common and scientific names.

The gardens are open to visitors at all times.



## DEMONSTRATIONS

Refer to 4-H Bulletin 311, How to Help Your 4-H'ers with Demonstrations for information on demonstrations.

Several ideas for flower garden demonstrations are given in the section of this flower garden leader's bulletin called "Ideas for Your Meetings" and also in the National 4-H Leaders Horticultural Guide.

Demonstration bulletins for members include 4-H Bulletins 111-B, 4-H Demonstrations.

## IDEAS FOR YOUR MEETINGS

	<u>Meetings</u>	<u>Activities</u>	<u>Demonstrations</u>
January	Review goals and	Visit a greenhouse to	Planning a flower garden
February	select projects.	see how seeds are	
March		started.	Taking a soil sample
	Discuss garden lo-	Visit a greenhouse to	Making a cold frame
	cation and size.	see Easter potted	
	Discuss annuals and	plants and cut	
	perennials.	flowers.	
	Plan the garden on	Attend a commercial	
	paper.	flower show.	
	Select varieties	Take a soil sample.	
	from the catalog.		
	Order seeds.		
	Sow seeds (March) for		
	early plants.		
April	Discuss soil prepa-	Visit a garden center	Sowing seeds
	ration including	or hardware store	
	garden tools.	to see tools and	Dividing perennials
	Discuss uses of	equipment.	Testing soil
	flowers--border,	Visit a flower garden	Using a cold frame
	beds, window	that features bulbs.	
	boxes, etc.	Have a seed identi-	Using a starter solution
		fication contest.	Setting out perennials
		Learn the spring-	How to use annuals in
		flowering bulbs.	your garden
		Plant hardy perennial	
		seeds outdoors.	

	<u>Meetings</u>	<u>Activities</u>	<u>Demonstrations</u>
May	Discuss transplanting.  Discuss fertilizers including the use of starter solutions.	Visit a flower garden that features perennials.  Begin identification instruction with colored slides and seedlings.  Show members how to press plants for flower collections.  Take a nature walk through the woods.  Learn the common perennials.	Color in the garden  Propagating chrysanthemums by cuttings  Fertilizing your flower garden  How to use bulbs in your garden
June	Discuss summer garden care--pinching and mulching.  Discuss summer care of the garden (weeding, watering, spraying, etc.).	Visit a local flower show.  Have a parent and member picnic.  Visit a commercial garden.  Have a flower identification contest.	How and why plants are pinched  How and why plants are mulched  Controlling flower insects and diseases
July	Discuss selecting for exhibition.  Discuss pest control.  Discuss conditioning flowers.	Visit members' flower gardens and evaluate each member's progress.  Collect and identify common insects and diseases.  Have a field trip to identify common flowers.  Learn the common annuals.	Conditioning flowers  How to use perennials in garden  What the judge looks for
August	Discuss members' garden problems.  Discuss bulbs.	Visit a garden featuring annual flowers.  Collect and identify common weeds.	Pressing flowers  Using Silica Gel to dry flowers

	<u>Meetings</u>	<u>Activities</u>	<u>Demonstrations</u>
August		Visit Botanical Gardens, Univ. of Michigan	
		Visit a trial garden or commercial planting.	
		Visit Beal-Garfield Botanical Gardens, MSU	
		Visit the Horticultural Gardens, Michigan State University.	
Septem- ber	Compare garden plans with re- sults and discuss.	Visit a local flower show.	Mulching perennials
	Discuss varieties and make notes for next year.	Visit a garden store to see bulbs.	Propagating bulbs
	Order bulbs.	Learn the fall-flower- ing bulbs.	Propagating perennials
			Selecting bulbs
			Digging dahlias
October	Plant bulbs.	Visit a florist to see	Planting bulbs
November		Christmas potted	
Decem- ber	Discuss mulching.	plants and cut flowers.	Putting the garden to bed
		Clean up the garden.	

#### EXPERIMENTS

To make flower garden projects more interesting, especially for your older members, you may want to encourage members to perform experiments along with their project.

Members may want to use mulches, different kinds and rates of fertilizers, compare varieties, propagate plants, or any other study.



## DEFINITIONS

- Annual - A plant which completes its life cycle in one year (from seed to seed in one year). Zinnia and Marigold.
- Biennial - A plant which produces seed during its second year of life and then dies. Many biennials are treated as annuals the seeds are sown during the summer or fall of one year, and the plants are sold as bedding plants the following spring). Hollyhock, Pansy.
- Bulb - A short, usually globose underground stem, bearing many fleshy, food-storing scale leaves; essentially a subterranean bud. Daffodil and Lily.
- Corm - A short, often globose, upright, underground stem which stores food; differs from a bulb in that the former consists chiefly of fleshy storage leaves growing from a small stem, whereas a corm is chiefly stem tissue. Crocus and Gladiolus.
- Hardy Bulbs - Bulbs that will survive the usual winter weather experienced in our temperate zone. Tulip, Crocus, Grape Hyacinth.
- Herbaceous  
Perennial - A permanent plant that dies to the ground each winter and resumes growth the following spring. Peony, Columbine.
- Perennial - A plant which lives for many years. Peony, Bleedingheart, Balloon Flower.
- Rhizome - A horizontal, underground stem, often enlarged by food storage. Iris, Calla.
- Tender Bulbs - Bulbs that will not survive the usual winter weather experienced in our temperate zone. These bulbs must not be allowed to freeze. Dahlia, Canna, Gladiolus.