



*growing*

# IRIS

*in the home garden*

HOME AND GARDEN BULLETIN NO. 66  
UNITED STATES DEPARTMENT OF AGRICULTURE



# growing IRIS in the home garden



Garden irises are hardy, long-lived perennials that need a minimum of care. They are an established "backbone" of home gardens because they bloom when few other plants do—after spring-flowering bulbs and before peonies, delphinium, and phlox.

Easy-to-grow iris varieties adapted to every region of the United States are available. They produce graceful flowers in a wide range of shapes, sizes, and colors.

## DESCRIPTION

Iris flowers have 6 petals. The 3 upright petals are called standards; the 3 that hang down are called falls. Flowers may be white, yellow, pink, purple, blue, reddish, or bicolored.

Principal types of iris are bearded, beardless, crested, and bulb.<sup>1</sup>

Bearded irises have a fuzzy line, or beard, that runs down the middle of the falls. They are called German iris or pogoniris. *Iris germanica* is the most commonly grown bearded species.

Bearded irises live through severe droughts and cold. The sword-shaped leaves are evergreen in warm climates and remain green until late fall in cold climates.

Most bearded iris plants grow 2 to 3 feet tall. Because they are easy to grow, tall bearded irises are recommended for beginning gardeners.

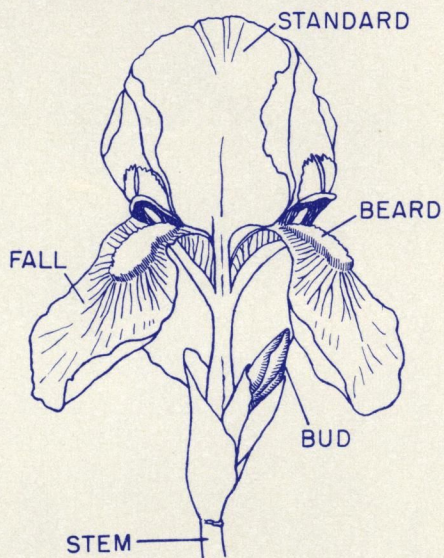
<sup>1</sup> For information on bulb iris, see Leaflet 439, Spring-Flowering Bulbs. Copies may be obtained from Office of Information, Department of Agriculture, Washington 25, D.C.

Usually, tall bearded irises bloom in May and June. Several varieties bloom in both spring and fall.

A group of bearded irises that naturally grow 4 to 9 inches tall is called dwarf iris. The two most common species are *I. pumila* and *I. chamaeiris*. Both are well adapted to rock gardens because they spread quickly and form dense mats of foliage. They bloom in March, April, and May.

Beardless irises are called apogon-iris or apogons. They have smooth fall petals and thin, grasslike leaves. Plants grow 1 to 4 feet tall. Most varieties bloom in June.

Japanese (*I. kaempferi*) and Siberian (*I. sibirica*) irises are the most commonly grown beardless species.



Bearded iris.

BN-7962

Japanese irises have soft, drooping standards and wide falls. Plants grow 2 to 4 feet tall. Flowers are borne on long stems.

Siberian irises have stiff, narrow falls and narrow, upright standards. Stems grow 18 inches to 2 feet tall.

Beardless types, which thrive in moist soil, frequently are planted on stream and lake banks.

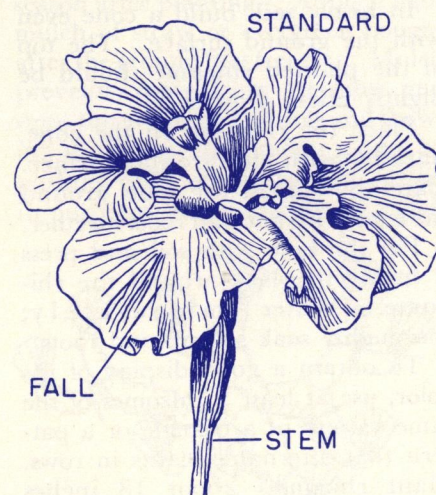
Crested irises have a small raised area, or crest, on the middle of each fall. Often, the color of these crests contrasts with petal colors. One of the more popular crested iris is a dwarf species, *I. cristata*.

## HOW IRISES GROW

Bearded, beardless, and crested irises grow from thick, underground stems—called rhizomes—that store food produced by the leaves.

Rhizomes grow slightly below the surface of the ground or at ground level. Many small roots penetrate the soil deeply.

Every year, underground offshoots develop from the original rhizome. Offshoots may be divided and transplanted to grow new irises.



Japanese iris (beardless).

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A rhizome that will produce a plant has at least one bud or growing point. Each bud produces a large fan of leaves and a flower stalk. Irises grown from rhizomes should bloom the next spring after planting.

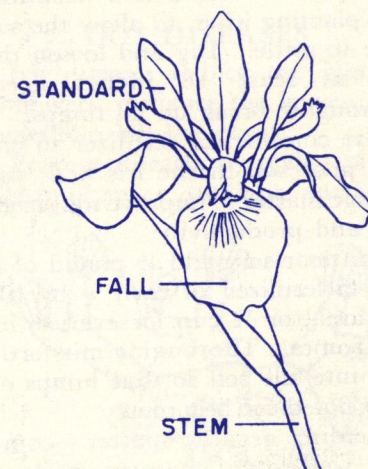
Irises also may be grown from seed. A seedpod may develop below a pollinated flower that is left on the stalk after blossoming. Most seedlings do not bloom for 2 or 3 years after planting.

The slow process of growing plants from seed is used chiefly by breeders to develop new varieties. Because irises are hybrids, flowers of seedlings rarely look like flowers of parent plants.

## VARIETIES

From the several thousand varieties of irises available, select varieties that will provide the colors you want in your garden.

Many new varieties are introduced each year. Growers' and breeders' catalogs and garden magazines describe and picture many popular irises.



Siberian iris (beardless).

BN-7961



## PLANTING IRISES

Irises may be planted in triangles, clumps, or borders or in beds with other garden flowers.

### When To Plant

The best time to plant irises is in late summer or early autumn. They should be established in the soil before winter.

Most garden-supply stores sell rhizomes only during the planting season. If you order irises by mail, usually you will receive rhizomes at the planting time recommended for your locality.

Plant rhizomes as soon as practical after you receive them.

### Where To Plant

Irises need full sunshine. Select a site with southern exposure and good air circulation.

Bearded and crested irises need lime soil with good drainage; rhizomes may rot in soil that holds water around them. Beardless types need moist soil that is slightly acid.

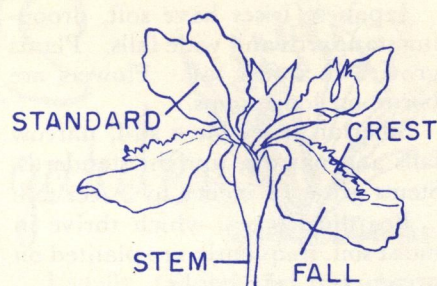
### Preparing the Soil

Prepare the bed 1 to 2 weeks before planting irises, to allow the soil time to settle. Dig and loosen the soil at least 18 inches deep. Thoroughly break up all lumps.

Use commercial fertilizer to enrich poor soil in the iris bed; use organic matter to improve soil structure and productivity.

For poor soil, add ½ pound of a 5-10-5 fertilizer for each 5- by 10-foot area, or ½ cup for every 6 or 7 rhizomes. Thoroughly mix fertilizer into the soil so that lumps of it do not touch iris roots.

Spading organic matter—compost, well-rotted manure, or peat moss—into relatively heavy soil may improve drainage.



Crested iris.

BN-7964

### How To Plant

In a well-prepared bed, dig a shallow hole large enough to receive the rhizome or clump of rhizomes you are planting. Form a cone of earth in the center of the hole for the planting base. The height of the cone—or planting depth—is determined by the type of garden soil.

In medium soil, make the cone high enough so that the planted rhizome is just below ground level.

In light or well-drained soil, build a low cone. The top of the planted rhizome should be 2 inches below ground level.

In heavy soil, build a cone even with the ground surface. The top of the planted rhizome should be slightly above ground.

Place the rhizome on the cone, parallel with the ground surface. Carefully spread the roots around the cone. Do not wad roots together.

Fill the hole with soil and press it firmly in place around the rhizome. Water immediately; thoroughly soak soil around roots.

To obtain a good display of iris color, use at least 3 rhizomes of the same variety in a triangle or a pattern that alternates plants in rows. Plant rhizomes about 18 inches apart. Point each fan of leaves away from other plants in the group.

If you want to produce masses of flowers quickly, plant undivided rhizome clumps or set 3 individual rhizomes 8 to 10 inches apart.

Before replanting a full-grown iris, cut leaves to one-third their full height.

### CARE OF PLANTS

Water plants often enough before blooming time to keep soil moist but not wet. Remove weeds and grass around the rhizomes.

Before plants bloom, loosen the surface soil with a hoe or hand cultivator. Be careful not to injure the rhizomes or the roots.

Cut flowers as soon as they fade, unless you want to obtain seeds.

Plants that are growing well with good green foliage usually do not need fertilizer. If you use fertilizer, apply it immediately after plants bloom. Work it into the soil around plant bases. Use about ½ cup of 5-10-5 fertilizer for 6 small plants or about 1 cup for a large iris clump.

In early fall, cut leaves 6 to 8 inches from the ground.

All irises need mulch the first season after planting. Apply a light mulch of straw or evergreen boughs after the ground first freezes. Mulch prevents roots from freezing and stops the alternate freezing and thawing of the soil that harms plants by pushing them out of the soil. Irises in northern States may need mulch

every year, even after they are established.

### PROPAGATING IRISES

When plants become crowded, divide the offshoots from the rhizomes. Irises should be divided 2 to 5 years after planting.

Divide and transplant irises in the late summer or early fall, after plants have bloomed. Cut leaves to one-third their full height. Dig under a clump of rhizomes and lift out the whole clump at once. Wash away soil with a steady stream of water.

Make small divisions if you do not want to redive iris for at least 3—or perhaps 5—years.

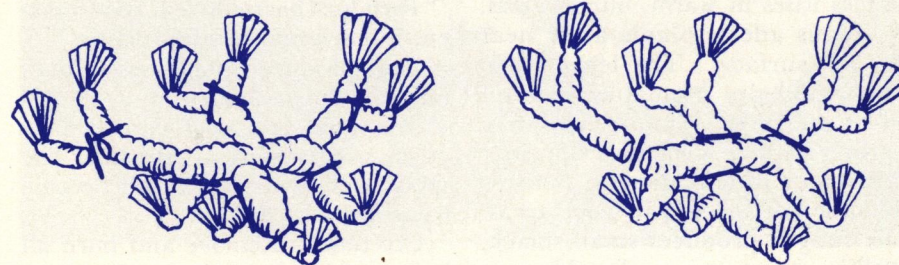
Make large divisions if you want many flowers the year after planting. Large divisions should be separated in 2 or 3 years.

Cut rhizomes apart with a sharp knife. Each division must have at least one growing point (or fan of leaves), a few inches of healthy rhizome, and a number of well-developed roots. When separated from the original iris clump, each division is ready to plant.

### IRIS DISEASES

Iris diseases reduce the number of flowers, disfigure the leaves, and sometimes kill the plant.

Prevent diseases by giving plants plenty of space, sunlight, and good



Small rhizome divisions; large rhizome divisions.

BN-7960



drainage. Clean up dead material quickly. Do not plant irises in crowded or completely shaded areas.

Treat diseased rhizomes as directed for specific diseases.

#### PRECAUTIONS

Insecticides and fungicides are poisonous; handle them with care. Follow all directions and heed all precautions on the label. Store them where children, pets, and livestock cannot reach them. When using them, keep them away from the eyes, nose, and mouth.

#### Bacterial Soft Rot

Bacterial soft rot is the most destructive iris disease. Bacteria enter the plant through breaks in the rhizome. Leaf bases and rhizomes begin rotting, and the plant soon dies.

**CONTROL.**—Dig up the diseased rhizomes. If rot is extensive, destroy iris. Cut out and discard diseased parts on less seriously affected plants. Soak healthy parts for 10 minutes in a solution made by dissolving 1 bichloride of mercury tablet in 1 pint of water. (Bichloride of mercury tablets are sold in drug and garden-supply stores.) Place the treated rhizome in the sun for about 2 days so that the cut surfaces will form new coverings. Plant treated rhizomes in new or sterilized soil.

**CAUTION.**—Do not mix or apply a bichloride of mercury solution near rose bushes because the vapors injure roses.

#### Fungus Rots

Sclerotic rot, or southern blight, attacks irises in warm, humid areas. A fungus affects plants at or near the soil surface. The leaves turn yellow and dry prematurely or rot off at the base. Small, yellowish-brown, seedlike structures appear.

Another fungus disease, Botrytis rhizome rot, occurs in cool areas. The fungus produces small, black, seedlike structures on the rhizomes and in the soil. A dry, pithy, gray

rot develops in the leaf bases and rhizomes.

**CONTROL.**—Dig up and burn plants that are seriously infected with either kind of fungus rot. Remove soil from the surrounding area; replace it with new or sterilized soil.

Cut out the rotted areas of slightly damaged rhizomes. Before replanting, disinfect the healthy parts in a bichloride of mercury solution.

#### Iris Leaf Spot

Iris leaf spot disfigures leaves and weakens plants. About flowering time, infected leaves are dotted with small, brown spots. Water-soaked margins around the spots turn yellow. Spots later develop a grayish center with black fruiting tufts. The leaf spot fungus overwinters in old leaves and produces new spores in the spring.

**CONTROL.**—If iris leaf spot has been a problem in your area, spray or dust the plants every 2 weeks from the time leaves emerge until they stop growing. Use a copper fungicide spray or zineb or ferbam dust.

In mild climates, cut and burn leaves of infected plants in the fall. If leaves are not removed, the fungus may remain active throughout the winter.

In cold areas, remove dead foliage before shoots appear in spring.

#### Rust and Bacterial Leaf Spot

Rust and bacterial leaf spot weaken, but seldom kill, iris plants.

Rust produces small, raised, dark red dots on iris leaves.

Bacterial leaf spot causes dark green, watery spots and streaks. The spots later turn yellow and become translucent.

**CONTROL.**—Remove and burn all leaves that show signs of rust or bacterial leaf spot. Do not let any

diseased leaves remain around plants. Infected leaves harbor spores that spread rust and leaf spot.

#### Nematode Infection

Root-knot nematodes and meadow nematodes are microscopic worms that attack irises and a wide range of other plants.

Root-knot nematodes cause distinct knots or galls on the roots. These knobby swellings on a root look like beads on a string.

When meadow, or root-lesion, nematodes attack iris, the roots discolor and decay. In advanced stages of infestation, many roots rot off. Small, lateral roots that replace the rotted ones give the root system a matted or turfed appearance. Younger, newer roots are dotted with small reddish-brown spots.

**CONTROL.**—Remove and burn plants with knotted roots or unthrifty plants with extensive root decay. Do not replant irises in the same place until nematodes have been eliminated.

Treat infested soil with a nematocide (chemical for killing nematodes in soil) or soil fumigant; use according to manufacturer's directions.



Iris borer larva tunneling in rhizome.

#### Mosaic

Iris mosaic, the most widespread disease of irises, is caused by a virus transmitted by aphids.

Diseased flowers may be mottled or striped. Light green streaks appear on the leaves of some plants.

Many infected plants do not show signs of disease. Individual plants may have typical symptoms at one season of the year and appear disease free at another season.

**CONTROL.**—Dig up and burn irises that show severe mosaic damage.

Reduce the spread of iris mosaic by controlling aphids. (See p. 8.)

#### IRIS INSECTS

##### Iris Borer

The iris borer causes more damage to iris than all other insects.

The pink, caterpillarlike larvae have rows of black spots along their sides. They are about 1½ inches long when full grown. Iris borer adults are large brown moths with black markings.

First symptoms of borers are tear stains and chewed leaf edges that appear on leaves in early spring. Irises later develop loose, rotted bases and holes in rhizomes.



Borer larvae hatch in early spring from overwintering eggs. These caterpillars pierce leaves and tunnel into the stem. Then they bore in to the rhizome, where they remain to feed and grow. At maturity, larvae leave the rhizome and pupate in the soil.

Bacterial rhizome rot readily attacks borer-infested plants.

**CONTROL.**—Dust or spray with DDT weekly for 6 weeks, beginning when plants start to grow. Use a dust containing 5 percent of DDT. To make a spray, mix 2 teaspoons of 25-percent DDT emulsifiable liquid with 1 gallon of water.

To get rid of borers not killed by insecticide treatment, dig up infested plants. Crush borers and brown pupae or cocoons found in soil. Throw away badly damaged plants.

Save healthy parts of rhizomes if they have buds on them. Cut away injured areas and soak healthy parts in bichloride of mercury solution as directed on page 6.

In the fall, clean up and burn all dead leaves and garden trash on which moths may lay eggs.

## Aphids

Aphids, or plant lice, are small, green, pink, or mealy-white insects that attack many plants.

Aphids may appear on iris plants in early spring. They pierce leaves and suck the juices. When they feed, they may transmit the virus that causes iris mosaic.

**CONTROL.**—To kill aphids, spray plants with malathion. Repeat if aphids reappear. To make the spray, add 2 teaspoons of 57-percent malathion emulsifiable liquid to 1 gallon of water.

## Verbena Bud Moth

Larvae of the verbena bud moth tunnel into new iris shoots and buds. Larvae are about one-half inch long. They have greenish-yellow, worm-like bodies and black heads. Mature moths do not attack irises.

**CONTROL.**—Cut and burn infested shoots and buds.

## Iris Thrips

Larvae and adults of the iris thrips pierce the surfaces of young leaves and leaf sheaths. They suck juices that ooze from the wounds. Dry wounds become small, straw-colored spots. Flower buds blacken; plant tops weaken. Iris thrips are especially injurious to Japanese iris.

Larvae of iris thrips are milky white. The black-bodied adults usually are wingless; they are about one twenty-fifth of an inch long when mature.

**CONTROL.**—Spray plants with DDT 4 times at weekly intervals during May and June. Do not spray during flowering. To make the spray, mix 2 teaspoons of 25-percent DDT emulsifiable liquid with 1 gallon of water.

Each year, the U.S. Department of Agriculture receives thousands of requests for information about growing flowers. In an effort to comply with these requests efficiently, the Department has prepared a series of publications on the flowers that are most frequently the subject of inquiry. This bulletin is one of the series.

*Prepared by*

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