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Gladiolus for the Home Garden

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The gladiolus, a member of the iris family, is one of the easiest summer flowers to grow. The gladiolus gets its name from the Latin word *gladius*, meaning sword. With its long, straight stalk and lilylike blossoms, the "sword plant" is one of the most handsome garden flowers widely used in Idaho for flower arrangements.

Probably no other ornamental plant has received so much attention from plant breeders, both professional and amateur. Hundreds of varieties have emerged from the native species originating in South Africa, Asia, and Europe. The modern gladiolus ranges from 2 to 5 feet tall and usually bears blossoms in a double row on one side of the stem.

The gladiolus comes in more colors than any other cut flower. Colors range from near black, near brown, red, smoky, purple, deep violet, deep rose, and scarlet to delicate shades of pink, lavender, yellow, green, and white. Novelty and mixed colors are also available. Some varieties have fragrance bred into them although the fragrance is usually slight or noticeable only at night.

"Glads," as they are commonly called, are an attractive addition to any home garden. They may be planted in irregular groups among other flowers, but they are usually easier to care for if they have their own area in the garden. Glads are rather difficult to dig up in fall if they are planted in a border with other plants.

The most popular use for glads is in flower arrangements. They blend beautifully with other cut flowers that bloom at the same time. Glads can be arranged in any container that has a proper flower-holding frog, florist's oasis, or chicken wire. The stem can be cut any place along its length. Cut glads at different lengths to make a more pleasing effect.

Gladiolus florets are edible and have a pealike flavor. They make colorful additions to summertime salads. Florets may be stuffed whole with a filling, dipped in batter and fried like squash blossoms, or broken apart and folded into a stir-fry dish at the last minute.

Corms

The part of the gladiolus planted in the ground is commonly called a bulb, but it is actually a corm. A corm is

the swollen base of a stem axis surrounded by dry, scaly skins that are technically leaves. A corm, whose inner structure is mostly a solid mass of storage tissue, is a true stem, that is, it has distinct nodes and internodes. Its structure differs noticeably from that of a bulb, which is composed of thick, fleshy scales (Fig. 1).

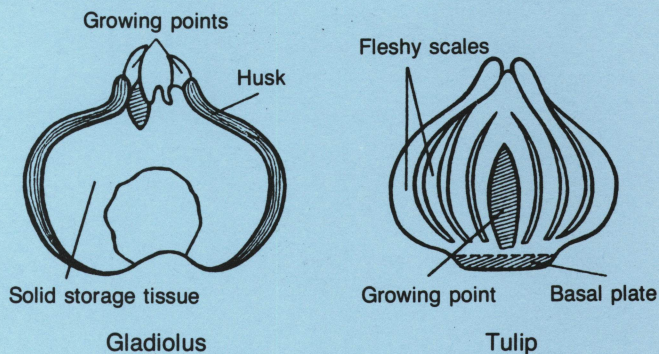


Fig. 1. Cross section of gladiolus corm (left) and tulip bulb (right).

After planting, new roots develop from the mother corm's base, and one or more of its growing points begin to develop leaves. When the leaves are about 8 inches high, the base of the leaf shoot starts to enlarge just above the mother corm, forming a new corm for the next year. As the flower spike develops, it uses food stored in the mother corm, which begins to shrivel. At digging time, the mother corm is usually found attached to the new corm, but nearly disintegrated.

When the leaves are about 18 to 24 inches long, the new corm is practically the same size as the one planted originally, and it has a mass of fibrous roots. At this time, tiny nutlike structures appear between the old and new corms (Fig. 2). These are cormels, sometimes erroneously called bulblets. The little cormels will be clones (identical genetic copies) of the variety from which they were grown. They will produce smaller-sized corms when planted the following season and may not produce blooms for 2 to 3 years. Planting cormels for their future corms is a good way to multiply corms.

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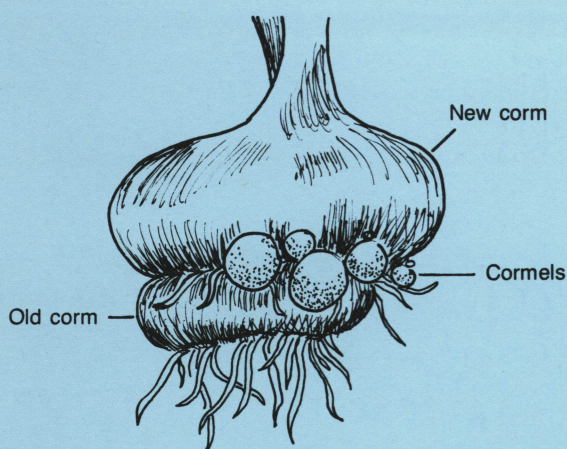


Fig. 2. Production of new corm and cormels.

Classification and varieties

Gladiolus varieties

Listing all the varieties of gladiolus available today would be difficult because they come in such a wide array of flower sizes and colors. Any variety list published today would certainly be out-of-date within the year as new varieties are introduced. The best suggestion for selecting gladiolus is to secure catalogs from reputable growers and choose varieties you would like to grow in your garden.

Planting stock

Selection of disease-free planting stock is of utmost importance. At garden centers, purchase corms that are completely free of scablike blemishes, soft spots, or decomposed areas underneath the husk. Peel away the husk or carefully inspect each corm. The base of the corm, especially, should be clean and without cracks or holes.

Most retail gladiolus catalogs list three grades of corms: large, medium, and small. However, flower size is also used as a method of classification. Glads have five bloom classifications: giant (500s), large (400s), medium (300s), small (200s), and miniature (100s). Flower size is determined by the measurement across the widest part of the two lowest florets on the bloom spike:

- 500s — more than 5½ inches across
- 400s — at least 4½ inches across but less than 5½ inches across
- 300s — at least 3½ inches across but less than 4½ inches across
- 200s — at least 2½ inches across but less than 3½ inches across
- 100s — less than 2½ inches across

Excellent spikes of gladiolus can be grown from variously sized corms. Generally you do not need large corms to have quality spikes.

Soil requirements

Glads do well in a variety of soils. The ideal soil is a sandy loam with a pH ranging from 6.6 to 6.8 and a

good supply of organic matter. Adding decomposed organic matter improves the soil's physical structure and encourages the production of larger blooms. Avoid using fresh manure because corms planted soon afterward may rot or burn. Aged manure, when worked into the soil 4 to 6 months ahead of planting, improves most soil. Glads grow better in humus-rich soils.

Make sure that the soil is well drained and avoid over-watering. A poorly drained soil restricts growth and may help disease organisms spread, which could destroy your entire planting. Plant glads in a new location each year to combat soilborne diseases.

Fertilization

Large corms usually contain enough food to produce good blooms without additional fertilizer. Fertilizer requirements may vary with climate, irrigation method, and soil type. Glads in sandy soil, for example, may need to be fertilized frequently because of the tendency for nutrients to leach from sandy soil. In heavier loam soils, less fertilizer may be needed.

Fertilizer may be broadcast over the soil after planting or applied in the row before planting. To avoid burning the corm, cover fertilizer with ½ to 1 inch of soil before planting. Use a fertilizer with a higher phosphorus content such as 5-10-10 or bone meal to encourage bloom. Follow package label directions for the amount to use.

After the leaves reach 6 inches high, side-dress with a fertilizer such as 10-10-10. Repeat the sidedressing just before the flower spike pushes through the leaves. Avoid getting fertilizer on the plants because it may burn them. Excess nitrogen will promote weak, succulent growth that attracts insects and encourages disease. Always use correct amounts of fertilizer — no more than the directions state.

Planting

Glads do best in full sun; however, a location that receives a little shade in late afternoon or early morning is also satisfactory.

Glad corms are planted concave side down. For early flowering, plant glads as soon as the ground is workable in spring and has warmed to at least 60°F down to a depth of 6 inches. This often occurs when deciduous trees begin to leaf out.

Should any corms start sprouting before you are ready to plant, set them concave side down in a cool area to encourage the emerging stems to grow straight. Plant sprouted corms directly into the ground as flower quality is sacrificed when they are transplanted from pot to ground. Plant sprouted corms so the sprout is pointed straight up.

For continued flowering, make successive plantings at 1- to 2-week intervals. You could also wait for the shoots of the previous planting to emerge before planting the next set of corms. Keep in mind that corms generally come into flower from 8 to 12 weeks after planting. Avoid planting close to the first fall frost date in your area.

If you are planning a large planting of glads for cut flowers, place the corms in rows 2 to 3 feet apart. Cormels are usually planted in rows 18 inches apart. For small home plantings, an 18-inch row spacing is sufficient for corms and cormels.

Very large or jumbo-sized corms may be cut vertically in half before planting to increase plant numbers. Dust the cut surface with a fungicide and allow the cut to dry overnight. (Ask the Extension agricultural agent in your county about suitable fungicides or refer to the *Pacific Northwest Plant Disease Control Handbook*.)

To encourage only one spike per corm for exhibition purposes, de-eye (break off) all but one sprout and dust the wound with a fungicide before planting. If you wish to increase your stock of corms, do not de-eye them. Each sprout will produce a new corm at its base.

Depth of planting varies with the type of soil and size of corms (Table 1). In general, plant deeper than recommended in sandy soils and closer to the surface in heavy soils. Deeper planting gives the plant more support and reduces corm splitting and cormel production.

Gladiolus corms require little care after planting.

Table 1. Planting guidelines for gladiolus corms.

Corm size	Planting depth and spacing
Large	6 inches deep and 6 inches apart
Medium	4 to 5 inches deep and 3 to 4 inches apart
Small	3 inches deep and 2 inches apart
Cormels	1 to 2 inches deep and 1 to 2 inches apart

Summer care

Support

The flowers will require staking, particularly in windy areas. Covering the stems with soil periodically during the growing season will build up the soil depth around them for extra support.

Watering

Glads need plenty of water during summer but will not tolerate wet feet. During dry weather, give them one or two deep waterings per week in heavy soils. Sandy soils will need more frequent waterings. Be sure to water long enough to penetrate to a depth of 8 to 10 inches. You can use a shovel or trowel to check moisture depth after watering. A summer mulch of lawn clippings, straw, or other organic matter will conserve water and discourage weeds.

Weeds

Without a mulch layer, you may need to cultivate every 7 to 10 days to control weeds and prevent soil crusting. To avoid injuring roots, do not cultivate deeper than 2 inches.

Insects and diseases

Insecticide treatments may be needed during the growing season to control aphids and thrips. Spray twice during the growing season with a systemic insecticide or

weekly with insecticidal soap. Rogue (dig up) and throw away all stunted and diseased plants *together with the soil surrounding the corm*. There is no cure for many of the gladiolus diseases. Sucking insects may also spread virus diseases to nearby healthy plants if diseased plants are left in the planting.

Blooming period

Flowering time varies from 60 to 120 days after planting, depending on the variety and size of corm. Catalogs will generally give blooming time. With proper selection of early, mid-season, and late varieties and successive plantings at 1- to 2-week intervals, you can have continuous bloom. To ensure flower development before fall frost, plant mid- or late-blooming varieties in early spring and early blooming varieties before late spring. Where the growing season is short choose early to mid-season varieties.

In general, small corms bloom 1 to 2 weeks later than large corms of the same variety. Also, when you plant corms of the same variety and size at different depths, the deeper planting may bloom a few days later. Corms kept at warm temperatures a few days before planting will grow and flower sooner.

Cutting blooms

You may cut a spike when the lowest florets first show color, but to appreciate the beauty of the flower, leave the spike until at least three or four florets have opened. When you plan to exhibit a spike, cut it with an 18- to 20-inch stem and with at least one attached leaf. An 18-inch stem is recommended for 100s and 200s, while a 20-inch stem is suggested for 300s, 400s, and 500s. Measure the stem from where the lowest floret attaches to the stem. Slide a sharp knife down the stem on one side, turn the knife into the stem, and cut and break the stem against the knife. Leaves will remain attached on the side away from the cut. For exhibition purposes, one-third of the florets should be open, one-third should be buds in color, and one-third should be tight buds.

For longer-lasting blooms, cut glads for arrangements in early morning or evening rather than at midday. Remove the spikes with a diagonal cut, leaving at least four to six leaves on the plant to manufacture food for the new corm. To encourage florets to open, immediately place the stems in a deep container of warm (110°F) water. Then set them in a cool, dark place before arranging. Florets open at night or in the dark. If you do not want more florets to open, hold them in a cool, lighted place. Change the water every day, recut each stem, and remove florets as they wilt to keep spikes and arrangements attractive longer.

Harvesting corms

Remove the glad corms from the soil 6 to 8 weeks after blooming, when the soil is fairly dry and before the leaves have turned yellow. If you wait until after the leaves have

turned, the corms will have gone dormant. Several diseases may attack corms left in cool, wet ground in the fall. If the soil begins to freeze, harvest late-blooming varieties before leaves turn yellow green.

Loosen the soil with a spading fork, grasp the top of the plant, and remove it. Shake off the soil gently if you want to save the cormels. Cut or twist off the stems just above the new corms and place the corms into a tray or basket to air dry. Keep varieties labeled and in separate containers for easy identification.

If you use a knife to cut off the stems, sterilize it in alcohol between varieties to reduce the spread of disease. Destroy any diseased corms and foliage when harvesting. Do not compost, shred, or use them as a soil amendment, which might spread diseases throughout the planting area.

Corms left in the soil over winter in Idaho usually do not survive. A few gardeners have had success when they planted corms 12 inches deep in a sheltered location and mulched them heavily, as follows. In the spring, dig a 12-inch-deep hole and cover corms with 4 to 6 inches of soil. After the shoots come up, add soil to the hole until the corms are buried 12 inches deep. Next spring, remove soil so that the new corms can come up again.

Curing corms

To cure corms, place them in shallow layers not more than 2 inches deep on a cloth or in a shallow box. Set them outside in full sunlight for a couple of days. If frost is predicted, bring the corms indoors. After they have dried, remove any soil attached to roots or corms.

Place the dried corms in well-ventilated flats, boxes, or trays with wire-screen bottoms or in mesh bags (onion bags or panty hose work fine). Even paper bags with air holes and open tops will do. Be sure to label all containers with the name of each variety.

Store the containers in a well-ventilated room at 80°F for 3 to 4 weeks. After this curing period a corky layer will form between the new corms and the old mother corms and roots. Separate the new corms from the old ones and separate all cormels. Discard the old corms. If you wait too long, the new corms will not break off the old corms easily.

Storing corms

Before storing the corms and cormels protect them with a fungicide-insecticide combination bulb dust. You can get these dusts at garden supply stores. Place a small amount of the dust formulation in a paper sack with a handful of corms or cormels. Shake the bag several times to cover the corms with the dust.

Always use rubber gloves when handling pesticides or pesticide-treated materials. Avoid breathing pesticide dust. Store the treated corms for the winter in a cool, well-ventilated room at 40° to 60°F. Colder temperatures will cause the glads to produce only foliage the following year. Warmer temperatures may cause the corms to break dormancy and begin growing prematurely. A cellar used for storing apples or potatoes may be satisfactory. Check the corms periodically for disease and discard those that are questionable.

In spring, hold the corms at room temperature 2 to 3 weeks before planting them. This will break dormancy and promote root and bud swelling.

Sources of supply

Mail-order gladiolus specialists offer the widest selection of choice varieties. Jumbo corms at low prices are commonly available from garden centers in early spring, but they may not be the best buy. They have grown for 3 or more years to reach jumbo size and have been exposed to insects and diseases longer. Medium and large corms, because they are younger, may be healthier.

Gardeners in Idaho also have the opportunity to grow many fine varieties developed in Idaho through the efforts of three hybridizers — the late Winston Roberts of Boise, the late Oscar Johnson of Jerome, and Lynn Coon of Paul. Three of the best are:

- Amy Beth — 200 size, ruffled, glistening white with a medium lavender picotee, inductee into the International Gladiolus Hall of Fame, hybridized by Roberts
- Frizzled Coral Lace — 300 size, extravagantly ruffled, coral salmon and cream, hybridized by Johnson
- Highstyle — 400 size, ruffled, rosy lavender with a white center, 1975 All-America Award winner, inductee into the International Gladiolus Hall of Fame, hybridized by Coon

Idaho-hybridized glads can be identified by the name of the hybridizer in the descriptions in gladiolus catalogs. Gardeners in northern Idaho may wish to grow glads hybridized by Mrs. Glory Jorgens of Spokane, Washington. In southeastern Idaho, introductions from Ed Squires of Ogden, Utah, and Lewis Kochevar and Tom Brasher of Salt Lake City, Utah, are excellent choices. Glads hybridized in or near your climatic area are more likely to do well in your climate.

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