There are currently around 270 species of Gladiolus recognized. The majority occur on the African mainland, but with outliers in Madagascar, Europe and the Middle East. Most of the species that interest gardeners are from southern Africa where around 170 species are recognized. It is the latter that form the focus of this article.

As with many other members of the Iridaceae, Gladiolus grow from a corm. This enables survival during seasonally dry, dormant periods, after which new growth commences. In southern Africa, new growth in Gladiolus coincides with the prevailing wet season. Over most of this area, summer is the rainy season, while in the extreme south west, centred on Cape Town, winter is the wet season.

In cultivation the winter growers produce their foliage from September onwards and flower in autumn, winter or most commonly spring. The summer growers are dormant during this period but develop new growth in early summer before flowering in late summer or autumn.

The main aim of this article is to examine the garden worthiness of species currently available in the UK. However, I will also take the opportunity to discuss a few other beautiful species which, with a little effort, can be raised from seed or occasionally purchased.
The easiest species

These first six species are chosen because they are readily available and have successfully undergone the test of time in cultivation. However, the choice of garden site and aspect still needs careful consideration to ensure success.

- **Gladiolus cardinalis**
  A cliff dweller, this is restricted to the southwestern part of Western Cape. It is found close to waterfalls, which keep the roots constantly moist during the summer growing season. Essentially a winter grower, it does not go fully dormant in summer and will not tolerate drying out.
  In gardens it can make large, impressive clumps on lighter soils in the south of England. Up to eight quite large, vibrant, bright red flowers cascade from the tips of arching stems 60–90cm long, the lower tepals having a white, longitudinal, spear-shaped mark.
  Some plants in nurseries as this species are undoubtedly *G. × colvillii*, a hybrid with *G. tristis*.

- **Gladiolus dalenii**
  This is the most widespread and common species of the genus, occurring throughout most of sub-Saharan Africa. In south Africa it is distributed throughout the east, usually favouring moist habitats.
  In cultivation it is easy. It flowers in summer, the ground colour is typically yellow, yellow-green, orange or red, often speckled in red or reddish brown.

- **Gladiolus flanaganii**
  Dubbed the ‘suicide lily’ due to the danger of approaching its inaccessible precipitous habitat, *G. flanaganii* is restricted to the high Drakensberg mountains between Lesotho and KwaZulu-Natal. It grows on basalt cliffs where the corms develop in vertical crevices and are almost continuously supplied by water seepage during their summer growth. Known since the original collection in 1894 by South African botanist Henry Flanagan, it was reintroduced to a wider audience in 1994–95 from seed collected by Czech botanist Josef Halda.
  Having successfully germinated seed in 1995, I have been growing it ever since. It proved to be easily grown in pots, and subsequently a hardy garden plant when given good drainage. Compact in habit, it remains less than 30cm tall due to the arching habit of its flower spikes. The flowers, produced in late summer, are dark carmine-red.
Gladiolus oppositiflorus
So-named from its remarkable habit of producing successive flowers facing in opposite directions, this is a summer-grower from southern KwaZulu Natal and the Eastern Cape. It grows in open, often rocky grassland and ranges from coastal habitats to mountains where it reaches 2,500m.

Coastal plants grow to 1m or more when in flower and are evergreen. Those from the mountains are deciduous and much shorter, especially those from the mountains of southern KwaZulu Natal, which are merely 30–40cm tall in flower. These were once designated *G. oppositiflorus* subsp. *salmoneus* but are now considered to be simply dwarf variants of the species. Nevertheless, it is worth maintaining this name as these diminutive forms are of great horticultural merit and quite hardy given UK conditions. The flowers are salmon-pink and open in late summer to autumn.

Gladiolus papilio
This summer-growing species occurs from the north of the eastern Cape, extending through KwaZulu Natal and Lesotho into Swaziland and Mpumalanga. The name is derived
from the butterfly-like markings on the lower petals.

Favouring marshes and wet flushes in nature, it is no surprise that it has been grown in British gardens for many years. It is very hardy and tolerant of moisture, forming colonies that spread by a stoloniferous habit. The flowering stems, up to 100cm tall, produce flowers with a prominent greyish purple reverse, and yellow, mauve or cream within, from late summer into autumn. It is a dependable species, although within a colony there can be a high percentage of foliage produced by immature, non-flowering corms.

Gladiolus tristis
One of the more widespread species, this occurs from Port Elizabeth in the east, extending across the southern Cape to Cape Town then to the north of Western Cape. Found in seasonally wet or perennially wet sites from near sea level to inland montane regions, it is a winter grower, flowering in spring with greenish to pale yellow or creamy white flowers. They are usually beautifully scented, especially in late afternoon and evening.

In gardens it is a neat plant, typically 40–80cm tall when in flower, and one of the most reliable outdoors.

More challenging species for pots that are readily available
Once smitten by the beauty of Gladiolus species, keen growers may strive to develop their collection and include other species. The following winter growers (unless otherwise stated) are suggested.

They may require more effort to locate suppliers, and some may only be available as seed. Unfortunately, none are easy to grow in the open garden. However, they should not represent a challenge to grow in pots in a frame or cold greenhouse.

Gladiolus angustus
A tall and elegant species to 120cm, this is notable for the very long perianth tube of the flowers which are cream to pale yellow with a red splash on the lower tepals. Growing in marshes or near streams in the southwest of Western Cape, it is tolerant of moisture.

Gladiolus carinatus
Widespread along the coastal flats of the Western Cape and undoubtedly needing good drainage, this is a neat and attractive species, just 20–50cm tall. The flowers are blue or grey with a striking yellow band on the lower tepals.

Gladiolus carmineus
Found at just a few sites, typically rocky outcrops and cliffs near the sea, this species is native to the southwest corner of Western Cape. It flowers in late summer or autumn, on leafless stems 30–50cm tall. The growth pattern is unusual, with separate flowering and leafy shoots. It has pale to deep pink flowers that have a narrow white streak on the lower tepals.

Gladiolus carneus
Widely distributed in the Western Cape, this attractive species of around 20–60cm tall is found in marshes and near streams. The flowers, produced in spring, are quite variable in shades of pink or white.

Gladiolus miniatus
The salmon-pink flowers of this neat species are strikingly pigmented deep orange along the midribs of the tepals. It is another coastal species from the south of Western Cape and around 15–40cm tall when in flower.

Gladiolus pappei
Despite being quite rare in the southwest of Western Cape, and closely related to G. carneus, this has shown promise as a garden plant. It grows in marshy habitats which are often permanently moist. The stems, 25–35cm tall, bear two or three attractive pink flowers, the lower tepals having a striking deeper pink median mark.

Gladiolus saundersii
The only summer grower mentioned in this section, this species is native to the southern and central Drakensberg mountains where it occurs in dry, but seasonally wet, scree and rocky outcrops. The large, scarlet flowers are quite distinct with the lower tepals speckled red against a white background.

Gladiolus trichonemifolius
This diminutive species, 12–25cm tall, favours marshy locations in the southwest corner of Western Cape. It bears up to three cream or
yellow flowers.

A species once known as *G. citrinus* is now regarded as a synonym of *G. trichonemifolius* as the small differences in stamen and tepal structure grade between populations. The fact that plants known as *G. citrinus* also have slightly more cup-shaped flowers with a central purple blotch is not thought significant by botanists although the difference is recognized by gardeners.

**Smaller species for pots that are less readily available**

There are more than 100 species to try from southern Africa, although many may not be easily available. However, if you can get hold of them, most are suitable for pot cultivation in a cold greenhouse. The smaller species described below are less likely to flop and are winter growers.

**Gladiolus alatus**

A compact species, this is 15–20cm tall in flower and from the southwest of Western Cape. The flowers are delightful, usually orange, with the lower tepals yellow green and tipped with orange.

Growers consistently report that it is shy to flower so a supplementary liquid feed may be beneficial.

**Gladiolus floribundus**

This is a beautiful species, found throughout the winter rainfall area of South Africa. As the name implies, it can have up to 10 or more large, cream, creamy yellow or pale pink flowers on stems 20–30cm tall.

**Gladiolus martleyi**

A localized but widespread species, this inhabits sandy and rocky sites in Western Cape. The flowers are pink or mauve, with the lower tepals bearing a bold, yellow mark that is edged deep pink, borne on slender stems to 30cm tall.

**Gladiolus meridionalis**

Growing in isolated colonies in both Eastern and Western Cape, this is usually found in stony soil on mountain slopes close to the coast. The pink or cream flowers are splashed with dark spots at the base of the lower tepals. It reaches 30–60cm high and flowers from mid winter onwards.

**Gladiolus orchidiflorus**

The sweetly scented flowers of this species are typically grey-green, the lower tepals having a transverse yellow band. It is widespread throughout the southern African winter-rainfall region, growing in sandy soils. In cultivation it requires a drier summer rest than most.
Gladiolus splendens

From the arid interior of Northern Cape, this species is tall, reaching 50–100cm in flower. Despite the surrounding landscape, it favours streamside areas, often seasonal, where an abundance of moisture is present in the growing season.

It can do well outside in milder areas of the UK, provided it is given well-drained soil.

Gladiolus uysiae

One of the smallest species, just 7–18cm tall, this occurs in Western and Northern Cape on seasonally moist slopes at 600–1,000m. The intricately veined flowers are reddish purple with yellow lower tepals that bear a green band. They are strongly and sweetly scented.

Once established in a pot it increases well by cormlets borne on long stolons spreading outwards from mature corms. Flowering in early spring, it requires a dry summer rest.

Gladiolus venustus

Widely distributed across the interior of the southern African winter-rainfall region, this species is usually found in habitats that dry out after its growing season. It is another diminutive species, reaching 12–30cm in flower. The flowers may be shades of blue or purple, with a splash of bright yellow on the lower tepals.

Useful hybrids

There are plenty of large ‘florist’s’ Gladiolus cultivars available, as well as the popular Nanus types. However, there is considerable scope for developing further hybrids using the species discussed above. With careful selection of appropriate parents these could bring charm and beauty to the number of hardy Gladiolus suitable for outdoor cultivation. Described below are a few that are already available.
highly variable in flower colour, and
with a winter-growing and spring-
flowering cycle. It has an upright and
self-supporting habit. Delightful new
creations such as this should be seen
as the vanguard of future
developments.

Cultivation in the open garden
For species and cultivars grown
outdoors an open, sunny aspect with
good drainage is recommended.
Raised beds are particularly useful
for the more demanding species.
Grit or coarse sand may be used to
improve drainage if necessary. My
experience with a pH of neutral to
slightly acid certainly meets their
needs, but they also grow well in
mildly alkaline soils.

The corms are quite small but
should not be planted too shallowly;
a minimum depth of 10cm is
recommended and this can be
deeper in very dry locations. When
planting, a liberal sprinkling of slow-
release fertiliser such as bonemeal
or fish, blood and bone in the
planting hole is recommended.
After planting, and until it is time
to lift and divide, an annual
sprinkling of slow-release fertilizer
will encourage flowering.

The summer growers have evolved
in regions where winters are dry
and cold. Some can be unforgiving
of wet winters in the UK and
unpredictable, sometimes dry
summers. A south-facing, dry
location is ideal for these, but they
must never be allowed to dry out
once in growth.

One experienced grower in
southwest England has achieved
success with a good range of winter
and summer growers, thriving in
outdoor raised beds improved with
grit and sand. These are covered by
an open-sided polytunnel in winter
to keep the rain off. This technique
might not meet with universal
approval on aesthetic grounds, but it
is effective.

Cultivation in pots
To be successful in maintaining a
collection, even if plants are destined
for the garden, a practical knowledge
of how to grow them in pots is
desirable. A covered structure such
as a well-ventilated cold greenhouse
or a cold frame is required, which
will provide protection from excess
winter wet. Most growers use plastic
pots but clay ones plunged in sand
can be used, particularly with those
that are 15cm in diameter or larger.
A well-drained compost is best,
typically equal parts of John Innes
no. 2 and horticultural grit. A lighter
mix can be achieved by substituting a
mix of perlite and gritty sand for the
grit and some growers incorporate
low-nitrogen, granular food.

Winter growers are initiated into
growth with a September watering.
Thereafter, the amount of water
given is dictated by the amount of
top growth. A supplementary high-
potash liquid feed should be given
every few weeks during spring when
temperatures rise. Once the leaves
goes brown, all watering and feeding
should be stopped.

Summer growers should be
watered from March. A similar
watering cycle is needed,
commencing in spring until autumn,
and they must never be allowed to
dry out when in growth.

Pots should be kept dry once
the corms are dormant. For winter
growers a warm, dry dormancy is
important. Repotting is best carried
out annually or every two years.
Corms in pots are more vulnerable
to the effects of severe frost than
those in the open garden, so
plunging of pots and covering with
fleece will give additional protection.
Some growers use a heater which
turns on once the temperature
drops below 0°C.

Propagation
Established garden clumps may be
divided when dormant, with the
corms replanted or potted up as
required. Leaving the dried flowering
stems in place provides an accurate
means of knowing where to dig.

Pot-grown specimens can be
divided very easily by simply shaking
out the compost and sorting the
corms by size. The smaller corms
borne on stolons can be potted
together, then grown on to flowering
size assisted by regular liquid feed.

Seed offers an excellent means of
diversifying the gene pool of a collection. Seed collected from garden plants, whether open-pollinated or not, is an ideal way to share material with other growers.

Deliberate hybridization is very much in its infancy and there are boundless opportunities to create desirable crosses for garden use, but ideally one or both parents should be hardy. Keep a close watch on seedpod development. The capsule will turn brown when it is nearly ripe and then unfurl to reveal the seeds – this is the moment to collect them.

Seed, whether from the wild or cultivation, requires a period of ripening after collection, and should be kept warm and dry at a normal summer room temperature for three months before sowing. An airtight box, stored in a fridge, may be used to store surplus seed thereafter, where it may remain viable for many years.

Sowing should be carried out using a schedule that mirrors the growth cycle. Seed of winter growers should be sown in September and will normally germinate a month later. Summer-growing species should be sown in spring, March or April, and should germinate within a few weeks. Use 7cm plastic pots which will accommodate up to 30 seeds. I prefer to use a loam-based compost with added perlite or vermiculite plus some sharp grit. After sowing the seeds should be covered with a little compost and a top dressing of sharp grit before watering in using a dilute solution of Bordeaux powder which will protect against damping-off disease. Pots should be placed outside, open to the weather, until germination is observed. Then bring them into a cold greenhouse. A liquid feed given at regular intervals will shorten the time taken to reach flowering size. Bulbs are best left undisturbed for the three to four years that this will take.

**Pests and diseases**

In my experience *Gladiolus* species are largely free from pests, but they can be susceptible to raids by mice. However, under glass, when a large number of plants are being grown, they can be susceptible to thrips, which feed on undeveloped flower buds leading to unsightly blooms. Red spider mite has been a serious pest under glass at RHS Garden Wisley, particularly with *G. flanaganii*.

In terms of disease they can be vulnerable to bacterial infections, or more commonly, fungal rots such as *Botrytis* grey mould, particularly when excess moisture, poor drainage or insufficient ventilation is present.

**Summary**

My experiences when growing *Gladiolus* from southern Africa in a well-drained garden in the English Midlands have met with success. Growers in the south of England may well do better. Those experiencing high rainfall in Wales or the cold of the north of England and Scotland may simply find conditions too extreme. Please do not despair in unfavourable locations – everyone can try them in pots.

There are many more species which can be grown and hopefully more gardeners will take on the challenge these beautiful and beguiling plants deserve.

Sincere thanks to Paul Cumbleton, George Elder, Sarah and Julian Sutton, and Keith and Ros Wiley for sharing their experiences with me in all aspects of cultivation.

**ACKNOWLEDGEMENTS**

**REFERENCES**


Pacific Bulb Society www.pacificbulbsociety.org/pbswiki/index.php/Gladiolus

**SUPPLIERS**

Sources of *Gladiolus* species seed:
Silverhill Seeds (Rod & Rachel Saunders) www.silverhillseeds.co.za
African Bulbs (Cameron & Rhoda McMaster) www.africanbulbs.com
Summerfields Indigenous Bulbs and Seed (Gordon Summerfield) summerfields@telkomsa.net

Sources of *Gladiolus* species bulbs:
Desirable Plants (Sarah & Julian Sutton) www.desirableplants.com
Wild Side Nursery (Keith & Ros Wiley) www.wileyatwildside.com
Rare Plants UK (Paul Christian) www.rareplants.co.uk

**JIM ALMOND** is an experienced grower, writer and lecturer on a wide range of bulbous plants.