

Hippeastrum

Introduction

The hippeastrum belongs to the Amaryllidaceae. This plant is also known as amaryllis, particularly in the United States and Canada. In Europe the name

amaryllis is used for another species of the family, *Amaryllis belladonna*.

	<i>Hippeastrum</i>	<i>Amaryllis</i>
Origin	South America	South Africa
Stem	hollow	solid
Number of flowers per stem	2-6	8-12
Scent	no scent	fragrant
Colour of seeds	black	green
Flower initiation	regular; after every 4 leaves a flower bud is formed	flower bud forms once a year
Number of offset bulbs	alternating annually; a small number	annually constant; several

Amaryllis belladonna is also a bulbous plant but as it is rarely grown it will not be dealt with here.

The hippeastrum is a tropical and sub-TROPICAL plant.

It can also be grown in temperate climates (Western Europe, Scandinavia) at temperatures of 18-23°C (68-77°F) (often with soil heating). The growing cycle is 7-11 months.

In Holland cultivated bulbs flower from December until April.

In South America, where the hippeastrum is indigenous the climate forces the plant to an annually recurring period of dormancy. This coincides with a period of drought or high temperatures when the leaves die off. In our climate this dormant period is induced artificially; for about four weeks before they are dug up the plants are not given any more water thus causing the leaves to wilt. As far as is known, the intensity and duration of light (day length) have no effect on flowering time and performance of the hippeastrum. In this respect the hippeastrum resembles the tulip, hyacinth and daffodil.

The flowering period depends on when the plants die off and on the temperature treatment given to the dry bulbs during storage. Flowering performance is influenced by the size and age of the bulbs.

With hippeastrum the initiation of flower buds

continues throughout the whole of the growing season. During the period of growth, bulb scales are continually being split off inside the growing point, in total 8-12 and nearly always in series of four. Six months to 2 years after initiation, these bulb scales grow into leaves. The series of four consists of three closed, circular scales and a half scale. On the inside of the half scale is a flower bud. One bud can form 2, 4 or 6 calyces.

If 12 scales have been initiated, that is three groups of four scales, there will be three half scales and also three flower buds. Two of these will flower 1½ to 2 years after initiation and the third a few months later.

Range of varieties

Hippeastrums are sold by colour and name. Bulbs which have been grown from seed are usually sold by colour. Bulbs obtained through vegetative propagation (from offset bulbs or by cutting) maybe sold under the same name as the mother bulb.

The range of varieties can be classified as follows:

a. Hippeastrum hybrids. These have been obtained by crossing and can be subdivided into:

the large-flowered type (largest group).

Scarlet Globe, bright red

Red Lion, deep red

Tangerine, orange red

Apple Blossom, carmine rose/white

Ludwig Dazzler, white

House of Orange, red

- The Gracilis type

a small flowered type with slightly trumpet-shaped flowers. The stem is shorter and thinner than that of the large-flowered types.

- The Christmas Joy type bright red.

This hybrid is larger than the Gracilis type and flowers more abundantly.

Multiples of crossings ensure that new varieties will regularly be on the market.

This is why the above list should not be regarded as exhaustive.

- Hippeastrum is used both for cut flower production and for pot plants.

Cut flower production

Range of varieties

The large-flowered hybrids, the Gracilis types (bulbs which are larger than 14 cm) and the Christmas Joy type are used (if a good production of flowers is wanted, the sizes 24-26 cm are preferred).

The flowers are not only suitable as cut flowers but can also be used in floral arrangements. The Gracilis type lends itself particularly well to the latter.

If during the growing period the growing conditions are favourable, the bulbs of the hippeastrum can be used for the flower production for 3-5 years running,

Planting

Planting depth: The bulb should be planted in such way that about 2/3 of the bulb is beneath the surface.

The rule obtains that the various bulb sizes give the following flower production:

22-24 cm : on an average of 1 flower stem per bulb

24-26 cm : on an average of 1½ flower stem per bulb

26 cm and larger : on an average of 2 flower stems per bulb

Planting density: this depends on the size of the bulbs; (15-25 bulbs per sq. yd.).

Bulb size: whether a bulb will flower, depends on its size and its age.

the average amount of rejects amounting to about 10%. Before re-planting the bulbs they should be subjected to a temperature treatment.

Soil and nutrition

The hippeastrum requires a very nutritious, well aerated soil with a pH between 6 and 7½. If the pH is too low this can be raised by applying 12 to 24 lb. of magnesium limestone per 100 sq. yd.

Soil type and fertilizer

Growing is generally done in the heated glasshouse soil as well as sometimes on raised beds. The structure and the humidity of the soil should be optimal. Humous, permeable soil gives the best growth.

Rather much organic material, such as beech foliage, mushroom compost, various marshy soils and farmyard manure is used. Kind and quantity of the material to be used mainly depends on the condition of the soil. Supplementary fertilizer will, if possible, be applied as a liquid feed via the irrigation system during the growing period.

During this period about 3 kg of fertilizer 7-20-30 per 100 m² of planted area is given.

Soil disinfection

The soil can be disinfected by means of steaming. Where the steam can penetrate sufficiently deeply into the soil sheet steaming may be carried out.

At present disinfection is also realized with methyl bromide. The results depend on the way of applying and on the extent of its penetrating into the soil, the composition of which should be uniform all over the layer. The results obtained with methyl bromide are somewhat smaller than with steaming.

General cultural rules

Watering is generally done with spray lines; the soil must be kept moist. After watering the crop should be allowed to dry in order to avoid fungal diseases. During very hot and sunny weather the crop may be sprayed overhead to reduce transpiration.

Ventilating and shading

During the summer months the temperature can sometimes rise to such an extent that it can cause scorching of the leaves. The glasshouse should be ventilated and shaded in good time to prevent this happening. There is a tendency at present to more or less dispense with shading and raise the humidity instead. This can be achieved quite well the modern humidification systems.

Flowering

Bulbs which are grown in Holland flower between December and May. The flowering period depends on the treatment the bulbs have received before planting and on the time of planting.

Picking of the flowers

The flowers are ready for market when the buds are completely loose, but not yet open. If they are cut at just the right time the stems may be 20-28 in. long. *Gracilis* is always about 4 in. shorter. The flowers are packed in special boxes in which they are laid side by side.

Lasting-quality

The hippeastrum flower does not lend itself well to cold storage after cutting. Cooled flowers do not always open fully.

If there are special circumstances (e.g. as lifting has to be done before the weekend) that require that the stem shall be stored for some time, the storage temperature should not be less than 9°C (48°F).

After flowering

When they have finished flowering the bulbs remain in the glasshouse for a long time (often six months or more) producing vegetative growth.

Flowering takes a lot of the food reserves out of the bulbs. The crop must be well cared for after flowering to ensure that sufficient food reserves are accumulated for next year's flowers.

Lifting

Time of lifting: after a growing period of not less than 7 months, counting from the planting date, the bulbs can be lifted.

Bulbs intended for Christmas flowering are lifted in August; for late flowering, from the end of September until the end of December. The bulb is lifted with its roots which should be kept in as good a condition as possible.

Cutting off the leaves about one inch above the nose of the bulb will discourage rotting. Immediately after the bulbs have been brought in hot-beds, the sectional planes are sprayed with a solution of 0,2% benomyl (benlate).

Drying

One of the main purposes of drying is to prevent the bulbs from rotting and for this reason quick drying is required. Once that danger is past, the roots and bulbs must not be allowed to dry out too much. The best drying temperature is 23°C (73°F) with a strong current. The degree of ventilation depends of course on the difference between the temperatures inside and outside the drier, but this should be arranged in such a way that the bulbs are dried as quickly as possible

Storage

The most favourable storage temperature for the early flowering is 13°C (55°F). If the bulbs are stored longer than 3 months, the temperature should be reduced to 5°C (41°F) after 6-8 weeks.

Should flowering occur after Christmas, the bulbs may also be stored at 17°C (63°F). During the storage period the room should be properly ventilated to prevent mould growth on bulbs and roots.

Pot culture

For good results the crop should meet the following requirements:

- the bulbs should give 2 flower buds which flower within a few weeks of each other, with sufficient calyces (3 or 4 per stem),
- the plants should form leaves and a flowering stem together.

Temperature treatment

As soon as the bulbs arrive, they should be given the following treatment:

- prepared bulbs should be planted immediately,
- unprepared bulbs may be stored at 17°C (63°F) or 13°C (55°F) until the flower bud is visible. Earlier planting is, of course also possible.

Planting

When planting, only the damaged roots and debris should be removed.

A piece of broken flower pot is placed on the bottom of the pot for drainage.

For further cultural advice see cut-flower growing.