Zabo Plant

CALLA nova by Zabo Plant

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Cultivation guide for calla lilies to be marketed as cut flowers

The most important factors to think about when growing calla lilies (botanical name: Zantedeschia) are are soil medium, irrigation and greenhouse climate. Other aspects to consider are disease prevention and nutrients. Here are a few guidelines that will contribute to a successful crop of calla lilies.

Tubers:

Zabo Plant supplies tubers that can be planted directly. Each tuber has several active shoots and has been prepared according to the Zabo Plant method. If you intend to plant the tubers in series we recommend not storing them for longer than 3 to 4 weeks. Calla lily tubers should be stored in a dry, well-aired space (to prevent mold) at temperatures between 58 and 60 °F (13 - 15°C). Calla lily tubers do not withstand cold well and should never be stored where they may be exposed to frost.

Soil or potting soil

Effective soil drainage is absolutely crucial. We recommend a soil type with pH values between 5.5 and 7.0. The soil must be disinfected prior to planting (e.g. through the application of steam) and subsequently treated with fungicides against Pythium and Rhizoctonia. The soil has to be thoroughly tilled to prevent it from becoming too compact. This is crucial for drainage purposes and to promote healthy root development. We recommend using compost (with a low nitrogen and saline content compost) or mulching the soil (with peat) prior to planting. If the soil is unsuitable for the cultivation of callas, or you prefer to grow callas in crates, you can use potting soil. The potting soil must be well-draining, with a pH value of 6.5. We recommend potting soil with a high percentage of coco peat (60 - 90%).

Tuber size and planting density:

We recommend leaving ample space between each tuber to ensure high-quality flowers. When determining the best spacing, it is crucial to take into account the differences in varieties with regard to the amount of flowers and foliage the plants produce. Please refer to the table below as a guideline for planting density.

Tuber size	Plant density net m^2	Plant density gross m^2
12/14	28	20
14/16	22	15
16/18	18	13
18/20	15	11
20/24	13	10

Varieties with coarser leaves should be spaced further apart by 10%.

Planting:

Calla lilies produce roots at the top of the tuber, which then grow in a downwards direction. This is why it is essential that the tubers are planted with the shoots at the top. After planting, the tubers should be covered with at least 3 inches of soil (8cm).

Greenhouse temperature:

The best temperature for the early development phase is between 16 and 20˚C. After planting, water the soil as you would normally, making sure that you do not over-water. Be particularly careful that you do not over-water the plants before the leaves start to unfurl.

Stage:	Day / Night	Temperature:
From planting until the first leaves	Day & Night	17˚C - 20˚C (63˚F. - 68˚F.)
From the first leaves until flowering	Night	17˚C - 24˚C (63˚F. - 75˚F.)
From the first leaves until flowering	Day	13˚C - 16˚C (55˚F. - 61˚F.)

Higher temperatures will accelerate the cultivation cycle, but a lower light intensity will produce taller stems and weaker plants.

A higher light intensity will produce more flowers and more vivid colors, while preventing excessive foliage. Too much shade or a low light intensity will produce fewer flowers and weaker colors. Screening can be applied to curb high temperatures and prevent stress to the plants.
The use of fans for proper air circulation is recommended to maintain a stable climate.
Calla lilies prefer a relatively high humidity level (65 - 75%). A relative humidity below 50% should be avoided, as well as serious fluctuations in relative humidity. Humidity can be controlled by chalking the greenhouse cover or shading the crop.

Greenhouse climate and lighting:

Calla lilies thrive when they get enough light, which they need to produce flowers. The successful cultivation of calla lilies depends on a sufficient amount of light, in combination with the right greenhouse temperature, nutrient program and irrigation. It is therefore necessary to continually monitor and adjust the temperature in the greenhouse and ensure the best possible humidity conditions. This will result in proper plant growth and promote the evaporation of excess moisture. The best humidity conditions for calla lilies are 65 - 75%. Prevent a relative humidity below 50% and avoid considerable fluctuations in relative humidity during the daytime. Calla lilies thrive best when cultivation variables are kept constant.

The right light intensity will produce not only more flowers, but also flowers of a better color. Enough light prevents excessive stem growth and drooping plants and leaves. Higher temperatures will shorten the cultivation process, but if the light intensity is too low this will lead to a lower profusion of flowers, a decrease in plant vigor and weaker stems.

Screening is recommended at a light intensity of 450 Watt/m2 or above (375 Watt/yd2 or 5,000 foot-candles of 55,000 Lux). Screens in combination with a horizontal air circulation system will help to create a stable cultivation climate. Screening can keep greenhouse temperatures down, while preventing the relative humidity from dropping.

Irrigation:

Calla lilies can be watered through overhead irrigation, but watch out for dry spots. After planting, the tubers must receive enough water to promote root development. In warmer climates we highly recommend using a drip system to ensure constant watering. However, we advise overhead irrigation until the first leaves unfurl. It is better not to give them too much water until they have reached this stage. The soil should not be too wet, rather a little on the dry side. Once the first flowers being to appear irrigation can be increased and the soil may be moister. Not enough water in that phase will produce fewer and smaller flowers. However, too much water is dangerous as you could damage the roots. Calla lilies thrive with thorough and constant irrigation. Pay attention to daily weather reports when deciding how much water to give your crop. It is best to water the plants in the morning, particularly on hot days.

Nutrients and fertilizers:

The first step in setting up a nutrient and fertilizer program is to take a soil sample. If pH values are too low calcium should be mixed into the soil before planting. Potassium, magnesium and iron are also important nutrients and must be mixed into the soil in the right amounts prior to the planting process.

It is also important to achieve the right balance between nitrogen and potassium. Too much nitrogen will result in longer stems and drooping plants.

A good quality of water is important, treated with a fertilizer to an EC (electrical conductivity) of approximately 1.5. Callas are highly sensitive to higher Sodium (Na), Sulphate (SO4), Bicarbonate (HC03) and Chloride (Cl) contents. The EC in the soil should never be higher than 2.0.

Crop protection:

Erwinia Carotovora, Pythium and Rhizoctonia - most commonly caused by a cultivation problem - are the most common diseases to affect calla lilies. Well-draining soil and a good disease prevention program are important factors in preventing premature plant death. In order to grow healthy plants under good cultivation conditions it is essential that you plant healthy tubers and use clean tools.
If your plants begin to shed their outer leaves this could indicate Rhizoctonia. You can try treating them with a fungicide such as Amistar (Azoxystrobine). If the problem persists, try Alliete or Ridomil. These crop protection agents can also be given preventively. Plants affected by Erwinia must be discarded.

Insects:

It is important to keep your plants free from insects to ensure a consistently high quality. Check regularly for aphids, trips and whiteflies. If you would like more information about this, don’t hesitate to contact us.

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