

Growing advice Siam™ Curcuma – 2018

General

Curcuma belongs to the Zingiberaceae. It is endemic to S.E.-Asia and it is a tropical all day plant. The brand Siam™ of KP Holland includes a new range of varieties suitable as houseplant as well as cutflower. In Europe a minimum of 14 hours growing light is required.

For the best leave- and flowerquality a greenhouse is necessary. A light, good draining and airy soil mixture is required. Adequate space is essential for good development of the plant shape.

In the past cutflowers used to be grown out of rhizomes; at the moment starting from tissuecultureplants is more common.

Temperature

When starting with tissue culture plants, during the first 2 weeks the temperature should be 24/22°C D/N. In the case of rhizomes give 30°C in the first weeks, until shoots appear. After starting up, 23/21°C is fine. When growing on concrete or lavafloors, the pot temperature should be kept equal to the air temperature.

Relative humidity (RH)

The setpoint D/N is 60%-75%. The plant can become wet early in the morning and around sunset because of guttation. The edges of the leaf and the bracts can show signs of dark discoloring because of vitrification; if this lasts too long the risk of permanent damage is very high (to avoid this: use ventilators, open the screen a bit, increase the temperature, take care of adequate ventilation).

When the RH gets <50% extra addition of watermist is advised.

Light

There are important differences in light requirements per variety. An indication:

- Alismatifolia types : close screens at 800 W/m²
- Siam series : " " " 600 W/m²
- Siam Splash : " " " 500 W/m²
- wide leafed types : " " " 450 W/m²

Screens can prevent too high levels of radiation. The use of an energy screen is preferred; the radiation screen gives too much reduction of the light.

Artificial light: a minimal day length of 14 hours is required; additional light on dark days (outside <150W/m²) is a necessity. Day lengths of less than 12 hours will make the plant go dormant, rhizomes and milk tanks will develop and the leaves will get brown and die after a while.

Climate settings

Basic settings for the cultivation of Siam™ Curcuma (adjust, if necessary, per greenhouse and per season):

- Heating temperature : minimum 23/21°C D/N
- Starting up the day : start increasing the temperature about 90 minutes before sunrise
- Ventilation temperature : 25°C (avoid too low RH)
- CO₂-concentration : during daytime, 500-800 ppm
- Energy screen open / close : start 10 minutes after sunrise / start 10 minutes before sunset
- Opening screen (high RH) : maximum 1%-4%
- Start RH regulation (day) : above 70% (first fans, then ventilation, screen, heating)
- RH regulation night : 75% (up to 3 hours after sunset a maximum of 85% is allowed)

Watering

During the first growing weeks, watering preferably has to be done alternately on the whole plant and only on the pot. After 1-2 weeks only apply water on the pot. When watering from above in a later growing period the water remains in the inflorescens and on the leaf stem and fungus can affect the leaves or flowers.

To avoid guttation it is advisable to water between 7:00 and 12:00 a.m.

Fertilizing

Standards for the most important main and trace elements in mmol en µmol:

	EC	pH	K	Ca	Mg	NO ₃	SO ₄	P	Cl	Fe	Mn	Zn	B	Cu	Mo
Growing period	0,9	5,4	1.2	1,0	0,4	2,5	0,6	0,7	<1,5	25	8	1	2	0,3	0,3
Flowering period	1,0	5,4	1.4	0,9	0,4	2,0	1,0	0,8	<1,5	30	8	1	2	0,3	0,3

Note: Curcuma is very sensitive to Boron.

Plant protection

For a safe start rhizomes can be soaked in a solution of 500 – 1.000 g CuOCl per 1.000 l water, just before planting, because of the fungicide and bactericide effect of copperoxychloride.

Ralstonia solanacea (brownrot) causes rotten, drooping and dried stems and leaves. Remove and destroy the whole plant immediately and hygienically.

Sometimes brown spots (rust) occur on the leaves, stems and flowers. It can be prevented with fungicides.

Other pests can be: mites, caterpillars, slugs, mealybugs, mosquitoes (Sciaridae) and thrips, lice, Duponchelia.

Additional aspects for the culture of cutflowers.

Some Curcuma varieties are very suitable to produce cutflowers. These flowers will last in a vase for 1 – 2,5 weeks. In the Netherlands all cutflowers are produced out of tissue culture plants, however, many foreign growers still start with rhizomes.

The growing circumstances for cutflowers are the same as those for houseplants that are mentioned on page 1.

To produce cutflowers the plants can be grown in big pots (Ø25cm) or in the ground.

- When growing in the ground it can be done only for one year; after that, the ground has to be disinfected thoroughly or no Curcuma may be grown there for 5 years.
- When growing in ground, during the first 3-4 weeks a soil temperature of 30 °C is demanded.
- Just before planting soak the rhizomes in a solution of water and copper oxychloride, with a concentration of 50 - 100 g/100 l water. Make sure the rhizomes are really wet and that the watertemperature is around 25°C. (There are good experiences with Cuprex 50% WG).
- Plant 40 rhizomes or 20 – 30 tissue culture plants per m², rhizomes 5-10cm under the soil surface.
- Keep the leaves and flowers as dry as possible; so try not to water from above, but use trickle irrigation.
- As soon as the plants start producing flowers, the consumption of potassium increases considerably, so increase the K in your fertilizer schedule with 2 mmol.
- Spreading of diseases through water is a high risk. Especially an eb/flood system can be dangerous when the water is reused, so make sure you have a good water-desinfection system.