



Cyclamen growing can be divided into 3 distinct stages each with their own objectives: rooting, growth and flowering. The success of the latter depends on the success of the previous two. The aim of rooting is to create the best conditions for the seedling's roots to colonize the pot properly. This stage is demanding for the seedling and can cause major strain. Various environmental and growth conditions and growing systems can affect the success of this decisive stage.

I - YOUNG PLANTS

A - Young plants features and care.

A good young plant that's ready to be potted should have healthy roots, enough for good regrowth in the new substrate. For best results, use plug dislodger which are readily available from your suppliers. When potting, half or a third of the corm should be visible with good contact with the substrate as well as a good setting in the plug cell.

"Direct planting" seedling



transplanted young plant



Young plant trays can be stored in the fridge at 50/54°F for a few days. There are risks of slowing down the young plant's regrowth and rooting at lower temperatures and longer durations. A young plant that's been dehydrated for a long time before being potted will never produce the same quality roots as a well-tended young plant.

B - Plug size/Pot size

The main essential rule of potting is to respect the size of the plug compared to the size of the pot to avoid suffocation when the freshly potted plug is first watered. The following table is an indicative guide for the size of the pot, different sizes of plugs, diameters and volumes.

Pot size Ø in in.	Ø plug in in.	Average age of young plant	Plug Volume cubic in.	Indicative* timing for rooting stage	Tray 20"x12" (qty of cells)
2.5 to 3.5"	0.62/0.66"	10 weeks	0.24-0.30	4 weeks	400-500
4"	0.70/0.86"	10/12 weeks	0.36-0.48	4 weeks	200-300
5"	0.86/1.10"	12/14 weeks	0.61-1.22	5 weeks	100-200
5.5"	1.18/1.57"	14/16 weeks	1.52-2.44	5/7 weeks	60-100
6.5"	1.18/1.57"	14/16 weeks	1.52-2.44	7/8 weeks	60-100

*Watering systems and substrate recipes can affect the rooting duration.

For pots ≥ 7.5" : plan a supplementary stage					
Pot size Ø in in.	Ø plug in in.	Average age of young plant	Plug Volume cubic in.	Indicative* timing for rooting stage	Tray 20"x12" (qty of cells)
(in pot of 3.5/4.5")= intermediate potting	0.70/0.86"	10/12 weeks	0.36/0.48	4 weeks	200-300
pots ≥ 7.5"	3.5/4.25"	14/16 weeks	15.25/30.50	8/9 weeks	

Some plugs can have the same diameter but a larger volume if the plug is deeper. We highly recommend this type of plug for potting cyclamen because it has a better buffer effect and achieves more roots guaranteeing excellent regrowth.

Please note that all the plug must be in contact with the new substrate without burying the corm. Often, the excessive pressure of watering can make the young plant jump out or bury it.



II - CLIMATE CONTROL

A - Setting up a site for rooting

The site for the rooting stage must be disinfected to ensure healthy growth.

We highly recommend putting the pots on the ground for the rooting stage in hot countries or during summer (ADT* >77°F) to maintain the substrate's temperature and humidity. However, there must be a small space between the ground and the pots to avoid water pooling which creates a drop in temperature when it evaporates e.g. when the ground isn't flat. In this respect, you can use raised pots or shipping trays with a lifted base.

Lifted growing tray



Good rooting helped by the lifted tray



The effect of different surfaces must be considered during this stage such as concrete as there can be significant drops in humidity in summer which disrupts the substrate's buffer effect and slows rooting down.

Open benches with a grid often produce an overly ventilated site and can stop successful rooting. Carrying trays or other protective systems are required to stop excess ventilation.

Given the importance of this growth stage among horticulturists, there should always be a dedicated rooting area away from the growth area so the different growth factors can be monitored.

B - ADT/maximum light

The ideal temperature recommended for rooting is around 64-68°F Average Daily Temperature (ADT) with a maximum light intensity of 4000 fc (400 W/m²) of radiation.

The rooting stage can last longer in some cases:

- Below 64°F, for certain varieties and large pot sizes, rooting stage can last far too long and the plant can stay then too small at flowering stage.

- With very warm growing conditions (ADT > 77°F) and /or maximum light < 3000 fc (300 W/m²), the rooting stage may be extended but for better result.

***ADT Average Daily Temperature

ADT* (Average daily temperature)**	< 59-64 °F in fc (foot candle)	64-68°F in fc	68-77°F in fc	> 77°F in fc
Maximal light	5000	4000	3500	< 3000

**During summer, depending on the climates, night temperatures fluctuate a lot and this heavily effects the average daily temperature in the greenhouses.

In order to control shade according to the ADT, especially in summer, we highly recommend whitening the outside of greenhouses and using screens inside based on the maximum light intensity.

Ventilation systems should be used to remove excess humidity created by watering.



III - WATERING CONTROL

A - How watering systems perform

During the rooting stage, an efficient overhead watering system should include two basic features: consistency and an adjustable flow in order to adapt water quantities to pot sizes.

Water booms have these features. They “sweep” over plants with a water curtain and exceptional consistency as well as control of speed and angle to better penetrate the pots and apply the amount of water correctly and uniformly.

Water boom



Sprinkler systems water plants in circles and by gravity. These are two disadvantages as they cause layered and irregular watering areas. Cyclamen’s umbrella-shaped foliage also limits how much water reaches the substrate.

Watering by hand with fine spray head nozzle that create an ultra-soft shower is recommended and better than sprinklers for simpler-equipped greenhouses.

B - Watering criteria

Whatever the watering method, the right shading needs imperatively to be adapted to the ADT. The aim is to protect a stable growth environment and maintain the substrate’s humidity.

Remember to avoid an excessive dehydration of the pot that would result growers to water too deeply and too much.

Always keep in mind that the weak point of the young plant is the root system, not the foliage.

Excess watering during rooting



Once potted, initial watering should be heavy to make the substrate’s humidity consistent. Subsequent watering should be lighter but regular. In practice, the entire pot shouldn’t be watered but just to enable the humidity to reach the bottom of the pot by diffusion. Be careful not to let the bottom of the pot dry out too much.

Good rooting



Even during hot periods, it is not recommended to use frequent, light and quick watering by hand to cool down the foliage as it softens the cyclamen and slows rooting down. It also increases the risk of developing diseases such as Anthracnose or Erwinia.



IV - FERTILIZATION

A - Starting charge fertilizer

A starting charge fertilizer of around 1.65 lbs/ yard³ (1Kg/m³) should be enough for feeding requirements throughout the rooting stage for most varieties and growth conditions.

To encourage rooting, fertilizer should not be used if the roots haven't reached all the substrate as salts in the fertilizer can accumulate and restrict growth, especially in warm climates. That's why we recommend watering using clean water free of fertilizer and acid even if the water pH needs to be corrected.

Excess fertiliser during rooting



B - Slow-release fertiliser

Regular slow-release fertilizers are not recommended. These fertilizers are released faster, before rooting and often in too big quantity.

This effect is even amplified in hot areas. Nevertheless, in areas with cool climates, with very low doses and very slow release they could be used with caution.

Please note that most of these formulas contain excess amounts of ammonia nitrogen (NH₄) too high for growing cyclamen.

V - GROWTH REGULATOR

When young plants regrow, growth regulators treatments can block both growth and consequently, the rooting. The best time to spray them, if necessary, would be at the end of rooting just before spacing.

Blocked plant due to growth regulator.

