

# General Orchid Culture: Roots

## Air

- Orchid roots require more air than roots of most other types of plants.

## Potting

- Pot in a medium that provides air at the roots.
- Pot orchids that need a lot of air at the roots in a coarse mix of fir bark, possibly with charcoal chunks and perlite. Use granules of 1.5-2.5 cm diameter, larger in more humid growing areas.
- Pot orchids that need to stay moist and require less air at the roots in a finer mix of fine fir bark, charcoal and perlite. The granules should be 0.5-1.0 cm diameter.
- Wash medium to remove fine particles and if water absorbing, such as fir bark, soak for 8 hours or more to moisten.
- Other media, including sphagnum moss and coconut husk or fiber can also be used in a mix or by themselves; however, fir bark mixes are the most forgiving for new growers. Clay pots can be used to provide more aeration of the medium in humid areas, however, plastic pots are recommended as they minimize root damage on repotting.
- Put Styrofoam peanuts or coarser mix at the bottom of large pots to have consistent moisture level throughout the pot.
- Repot when plant growth reaches the side of pot, or when medium is breaking down (slip the plant out of its current pot to check). Repot when the plant is growing new roots.
- Roots may grow out of pot; this is not a reason to repot. Do not remove these roots.
- If medium is breaking down, shake off old medium when repotting and remove any decomposing, soft, brown roots as well as any pseudobulbs which are dead (no longer green in color). Use a sterile knife or razor blade to avoid spreading infections.

## Watering

- Water when the roots have reached the degree of dryness appropriate for the type of plant rather than watering on a fixed schedule. This will be faster in hot weather or during cold winter weather when central heating lowers the humidity. Small pots dry out more quickly, particularly if the plant is large in comparison to the pot.
- Detect moisture level by the weight of the pot, by digging a finger into the mix, or by inserting a pencil into the mix and examining it for moisture.
- Use large amounts of water to thoroughly moisten the potting medium and roots, flush minerals and refresh the air around the roots. Water equaling the volume of the pot should run out the bottom. Pots should not stand in water.
- If medium is completely dry, water heavily several times at 30 minute intervals to remoisten.
- Orchids prefer water with a low mineral content, such as rain/snow water. If water is hard (high mineral content), repeat the watering after 30 minutes. Water should be room temperature or slightly warmer.
- Never water with water softened using a softening unit to which salt is added. The calcium in the water will have been replaced with sodium, which is toxic to orchids.

## Fertilizer

- Fertilize weakly and frequently. Apply the fertilizer weekly, in a concentration such that half the recommended concentration for houseplants is applied over the duration of the recommended interval. If the fertilizer recommends applying 1 mL per liter once a month, apply 1/8 mL per liter weekly instead, so that 1/2 mL (4 x 1/8 mL) per liter is applied over the month.
- Fertilize when actively growing and less or not at all during dormant periods.
- If you use a highly mineralized water (hard water), water thoroughly with plain water about one hour before and one hour after fertilizing to avoid burning the roots.
- Fertilize with a balanced fertilizer such as 20-20-20.
- If rain, distilled, de-ionized, reverse-osmosis or naturally soft water is used, then calcium and magnesium need to be provided by the fertilizer. Hydroponics fertilizers usually provide these extra minerals.
- Too much fertilizer will cause burnt root tips and burnt leaf tips. Too little fertilizer causes pale yellowish leaves and increasingly smaller new growths.
- Foliar application of seaweed extract can be used to provide micro nutrients beneficial to plant growth. These nutrients can also be obtained by occasional use of fish fertilizer or weak manure 'tea' although continuous use will provide too much Nitrogen.



Cattleya labiata

This is one of two general culture sheets. The other on "Leaves" as well as culture sheets on particular types of orchids are available from your society or on the web at <http://www.canadianorchidcongress.ca/> and provide additional cultural information. For specific help with your orchids or further information join your local orchid society.

