

Catasetinae and How to Grow Them

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The subtribe *Catasetinae* includes over 300 species in the related genera *Catasetum*, *Cynoches*, *Mormodes* and *Clowesia*. Individually, they have been considered orchid oddities, or “botanicals,” of interest mainly to the seriously addicted enthusiast. These robust orchids are native to lowland tropical forests in Central and South America and are usually grown in warm or intermediate conditions. Their unique flowers, method of pollination, growth habit and dormancy period make these truly remarkable orchids and excellent plants for the hobbyist. Understanding how seasonal weather influences their annual growth and flowering cycle will make you a better grower and lead you to produce awe-inspiring floral displays.

One of the most interesting things about two of the genera *Catasetum* and *Cynoches* is that the flowers are sexually dimorphic. This is the condition in which a single plant can produce flowers that are either male or female with structural differences between the two sexes. In my experience, flower sex is determined by the quality of the environment. Plants that receive the right amount of light, moisture and fertilizer for a long period of time are more likely to be large and robust, and these are able to carry seed capsules through the dry winter dormant period. It takes considerable energy reserves for a plant to carry a seed capsule to maturity through the winter dormant period, and it makes sense that the largest plants growing in the most favourable locations would produce female flowers. Plants growing in less optimal conditions, like low light or extremely bright light, have less access to moisture and nutrients, will be smaller, and more likely to bloom with male flowers, as pollen production requires less energy than carrying a seed capsule to maturity.

Catasetinae plants have adapted in nature to growing where there is a wet summer followed by a dry winter period. The plants begin their growth cycle during the lengthening days of spring and are in active growth during the wet summer months. The start of dormancy is signalled with the onset of shortening days and diminishing rains in the

autumn. In winter, with short days, cool nights and an end to the rains, the plants prepare for dormancy by dropping their foliage. This leaf drop is the plant’s adaptation to conserve moisture and survive until spring. Few orchid plants go through such a dramatic change based on strongly seasonal conditions, but once you understand these requirements and adjust your culture accordingly, *Catasetinae* will become some of the most rewarding orchids in your collection.

As with all orchids, closely duplicating the natural habitat of *Catasetinae* will give the best results. Let’s look at how we can learn from nature and adapt our growing conditions to best suit the plants’ needs.

Spring: *Catasetinae* begin their growth with the lengthening days in the spring. New growth emerges at the base of the prior year’s pseudobulb (now leafless). In nature the development of the new growth occurs prior to the rainy season, and the plant does not need watering during its initial growth. After about a month, the new growth will put out new roots. Once these new roots have reached a length of 75-150mm, it is time to begin watering and fertilizing. When beginning to water, start slowly and gradually increase the frequency and quantity as the plants develop their pseudobulbs. I start the watering season using ½ tsp fertilizer per 1 US gallon (3.78 litres) of water. Waiting to water until the new roots are 75-150mm long is an important part of good plant culture, as it helps assure the new roots will develop to their full potential. Ideal temperatures in early spring are 60-65 degree nights (16-18 degrees C) and 75-85 degree days (24-29 degrees C). Humidity at 50% is best to support the plants and new roots.

Summer: With the new roots sufficiently developed and irrigation and fertilization begun, the plant enters a period of rapid growth and development. The new pseudobulbs grow and mature quickly; you can almost watch the plants grow! This is the rainy season in nature, when it is

The stages of growth and root development:



No water, growth just started



No water, roots just starting to show



Start watering now, roots 75-150mm long and into the medium



Fully rooted plant, top growth 250mm water and fertilize regularly



This is the plant size to begin watering

raining almost daily, and the plants have evolved to utilize constant moisture. In most cases, irrigation will be needed 2 or 3 times a week for best growth. A balanced full-strength fertilizer at 1 tsp. per 1 US gallon (3.78 litres) of water is suggested. Bright light levels at or above those suggested for *Cattleya* will help to produce strong growth and flowering. Ideal temperatures in summer are 65-75 degree nights (18-24 degrees C) and 75-95 degree days (24-35 degrees C), with humidity of 75% or higher.

Fall: *Catasetinae* will have fully developed their pseudobulbs by now. In nature, with the onset of shortening days in autumn and nearing the end of the rainy season, *Catasetinae* have completed the season's growth, and the bulbs are beginning to harden off in preparation for dormancy. The first signs of dormancy in your collection will be yellowing leaf tips on the lower leaves. Shortly thereafter, the whole leaf will yellow and drop. This leaf abscission continues up the bulb until all are gone. Now is the time to reduce your irrigation to half of what you provided in summer and stop fertilizing. The general rule is to reduce watering by half and stop fertilizing by mid-November in the northern hemisphere (mid-May in the Southern hemisphere). Ideal temperatures now are 55-65 degree nights (13-18 degrees C) and 75-85 degree days (24-29 degrees C) with humidity at 50% or higher.

Winter: This is when dormancy begins in nature. Early winter signals the end of the rains, and the plants respond by dropping their leaves and going dormant. By now leaf drop is well underway. By late December in the northern hemisphere (late June in the southern hemisphere), most leaves should have yellowed or fallen off and irrigation should be stopped. Temperatures should not go below 50 degrees at night (10 degrees C), and days should be 75-85 degrees (24-29 degrees C) with humidity of 50% or higher.

A word about dormancy: The onset of dormancy is caused by factors such as the maturity of the pseudobulb, shortening day length, cooler day/night temperatures, a reduction of rain (irrigation) and finally no rain (no irrigation). In greenhouses or outside, dormancy will occur naturally. However, when these plants are grown in the home or under lights, dormancy sometimes needs to be forced. I have found that reducing irrigation in early November and stopping the

watering in late December regardless of the number of green leaves, will help to trigger dormancy. This process is important, because these plants need dormancy as an important part of their growth cycle. The sooner the plants go dormant, the sooner they will begin new growth in the spring. We want the new growth to begin as early as possible in the spring to assure a long summer growing season and give the best flowering.

Air movement: As with many orchids *Catasetinae* enjoy abundant air movement. If you are growing in a greenhouse, use fans to circulate the air. Hanging the plants allows for maximum air movement, and they often do best when hanging.

Light levels: *Catasetinae* like light levels comparable to *Cattleyas* at about 2500-4000 foot candles (fc). *Catasetinae* grow well outside in the summer months under 60% shade cloth.

Potting mix: For seedlings and mature plants up to a 125mm pot size, I like to use New Zealand sphagnum moss with the bottom 1/3 of the pot filled with Styrofoam peanuts.

Containers: I prefer to grow in plastic pots; however, clay pots and baskets will work as well. *Catasetinae* don't like to be over potted, and it is important to select a pot size that will allow for no more than 2 years of growth.

Repotting and Dividing: This is best done as the new growth is just starting to develop and before the new roots start to show. Even though you have repotted, remember not to water until the roots are well established and 75-150mm long. Unlike most orchid plants, *Catasetinae* do well when separated into 2-bulb divisions. Divisions may be made by cutting with a sterile tool or by pulling the bulbs apart.

Insect pests: The only pests I have seen on *Catasetinae* are spider mites, which appear to be attracted to the undersides of the soft leaves. Spider mites are quite small and may require a magnifying glass to be seen. They live and feed on the chlorophyll in the cells on the undersides of the leaves. Check for them as the new growths are leafing out, and control them before they cause damage with a recommended miticide from your garden centre.

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Catasetum (Ctsm.) Orchidglade
'Davie Ranches' AM/AOS



Ctsm. Susan Fuchs 'Burgundy Chips'
FCC/AOS



Cycnoches (Cyc.) warszewiczii
'SVO Jumbo' AM/AOS



Cyc. Pineapple Popcorn
(*Cyc. warszewiczii* x *Cyc. Kevin Clarke*)



Fredclarkeara (Fdk.) Frank Smith



Mormodia (Mo.) Susan Wilson 'SVO'
(*Cl. Rebecca Northen* x *Morm. warszewiczii*)