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## Fertilizing Demystified

Type	Formulation	When to Use
Growth / Leaf Promoter	28-14-14 or high nitrogen / first number	Use to encourage new growth after blooming (or after rest period if applicable)
Bloom Booster	10-30-20 or high phosphorus / second number	Use when new growth is about the same size as the previous growth(s) but before the pseudobulb forms. For orchids where blooming is induced by a change in cultural conditions (ex. Phalaenopsis), start use at the same time as change in conditions.
Root Promoter	10-52-10 or very high phosphorus / second number	Use for 4 to 6 weeks to help root development of newly potted orchids with healthy roots. For plants with weak root systems, do not fertilize for 1 month, then fertilize with diluted root promoter.

So you got a new orchid! You found the perfect spot for it, with the right light level and temperature. What was that they said about fertilizing? Something about numbers, one of them highest. At that point, if you went to your local garden center looking for fertilizer, you were confronted with a myriad of formulations, each more cryptic than the next. If you're like me, you played it safe and picked one with an orchid on the label or one marked "orchid fertilizer". At home, you mixed the solution according to the directions but didn't know how often you should fertilize.

Orchids are light feeders. In nature, the epiphytic species use branches and rocks as support and their root, exposed to the air, cling to the bark and get nutrients from whatever decomposing organic matter gets trapped in cracks and depressions. The terrestrial orchids' roots grow in very coarse debris which is also nutrient poor. As a result, whichever formulation you choose should be diluted to 1/2 to 1/4 the recommended strength, unless the fertilizer you have specifically says it does not require dilution for use with orchids. Most orchid hobbyists fertilize "weakly weekly", at 1/4 strength every week.

Formulations are represented by 3 numbers. The first number represents the percentage of nitrogen in the fertilizer, the second represents phosphorus (usually as phosphoric acid) and the third represents potassium (usually as potash). Smaller numbers means the fertilizer solution is, overall, weaker. For example, 7-15-9 is a weaker solution than 10-30-20. From the plant's point of view, proportion is what matters.

**To encourage a new growth or strengthen an already existing new growth:** High nitrogen fertilizer should be used. The formulation should have a high first number, approximately twice as high as the second and third number. Use may begin immediately after blooming if the orchid does not require a rest or at the end of the rest period if it is required. Growth promoter should be applied until the new growth is just finished leafing out; the new growth should be



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about the same height or taller than the previous growth and the pseudobulb should not have formed yet.

At that time, you will switch to a bloom booster, high in phosphorus. The second number should be approximately 2 to 3 times higher than the first number and slightly higher than the third number (the third number being higher than the first number). Continue using the bloom booster when the flower spike appears and continue using through blooming. Resume use of the growth promoter after blooming.

Orchids need to be repotted every 18 to 24 months. It is preferable to repot when the new growth has 50 to 100mm (1/4-1/2 inches) roots. To encourage rooting through the new media and quick establishment, fertilize with very high phosphorus for 4 to 6 weeks. The second number should be 5 to 6 times higher than the first and third numbers. If your plant has a weak root system, is stressed or unhealthy, fertilizing with root promoter may burn the roots. In those circumstances, do not use fertilizer until new roots appear, then fertilize at 1/8 strength increasing progressively to 1/2 strength.

**Here are a few exceptions:** *Phalaenopsis* do not get new growths and may be fertilized with 20-20-20 (balanced) fertilizer, year around. Alternatively, you may choose to fertilize with growth promoter most of the year and with bloom booster after a cool treatment which will trigger blooming. Plants blooming on immature new growth, such as *Zygopetalum*, will need a bloom booster upon appearance of the new growth, switching to a growth promoter immediately after flowering.