Slow Release- Fast Relief.

How often have we heard the following? :-

. 'I don't have time to fertilize my orchids'

. 'Orchids need to be fertilized "weekly, weakly"

. 'It is best to alternate fertilizers '

. ''Use "Bloom Boosters" (high potassium, high phosphorus) on flowering sized plants and high nitrogen fertilizers on seedlings'

. 'Slow release fertilizers are no good for orchids because they burn the roots'

. 'My orchids grow alright without any fertilizer'

If we accepted each of these statements at face value we could be excused for believing that fertilizing orchids is quite complex. While there is an element of truth in each of these comments, overall there is also about as much myth as fact. For those who value simplicity, the following may assist with your fertilizing program.

The Basics

Orchids cannot grow and flower unless they are supplied with all of the major and minor (trace) elements (TE). The major elements (ie. those required in the greatest amounts) are nitrogen (N), phosphorus (P) and potassium (K). Calcium (Ca), magnesium (Mg), sulphur (S) and iron (Fe) are required in lesser amounts. The elements that are required in trace amounts only are boron (Bo), copper (Cu), manganese (Mn), molybdenum (Mo) and zinc (Zn). Orchids grown in organic media, such as bark or sphagnum, can obtain some of their nutrients from the medium itself. However, inorganic media, such as diatomite, granite ('pink rock') or Quinkan do not supply any nutrients. All nutrients must be supplied from external sources. For dedicated souls, there is no cultural reason why these nutrients should not be supplied by regular foliar applications of a highly soluble complete fertilizer (ie. one containing all nutrients in the correct proportions). There is however a simpler way to fertilize and still obtain equivalent results. For those who are time poor, lazy or who want to use their time more efficiently, a simple and highly effective solution to your fertilizing problems is to use an appropriate slow release fertilizer.

There is a bewildering array of slow release fertilizers at most garden outlets. Which one is best for orchids? Should I use a 3,6,9 or 12 month type? The choice is simplified if we understand that '3month' means that at an ambient temperature of 21degrees Centigrade and in the presence of moisture, the granules will release a steady stream of nutrients over about 3months. However, for every 10 degree rise in ambient temperature, the active life of the granules is halved. Thus, at 31degrees, a 3month fertilizer will remain active for about 6 weeks and at 41degrees it will remain active for only 3 weeks!!! At these higher temperatures, the release of nutrients is so rapid that the roots may burn and the supply of nutrients is soon exhausted. Basically, in our region, slow release fertilizers last for between 50 -60% of their stated time. For that reason, it is recommended that 9month forms are used. They have a much greater margin of error and minimise the number of yearly applications required. An application of 8-9month in Spring will provide a steady supply of nutrients for about the next 5 months. Another application in Autumn, when watering frequency and temperatures are both decreasing, will provide nutrients for about 6-7 months. Spring and Autumn applications are required for those orchids that are in continuous growth or that flush at least twice/year. The cattleya and oncidium alliances, hardcane dens and the vandaceous group are examples of this type of orchid. For orchids that have a winter dormancy, such as softcane dens and catasetums, the dose should be restricted to a single application in Spring only.

Not all slow release fertilizers contain all of the required elements. Since we are trying to simplify the system, the first step is to choose a slow release fertilizer that specifies NPK +Mg+TE. The only nutrient that is lacking is calcium (Ca). Under most circumstances, town water contains sufficient Ca for optimum growth and flowering of most orchids. However, there is no Ca in tank water. Symptoms of calcium deficiency (progressive blackening of the tips of new growths generally with a yellow halo preceding the blackening) can occur where tank water is used exclusively. The deficiency can be corrected by using calcium nitrate as a foliar spray. Even though town water is used, calcium deficiency can occur, particularly in some cattleya alliance clones, when high amounts of NPK are used. Top dressing the medium with powdered dolomite (Ca + Mg) will correct the deficiency.

For flowering-sized plants, optimum growth and flowering is promoted by using fertilizer that has an NPK ratio of about 10:5:15. However, N ratios up to 15 are quite satisfactory for both flowering-sized plants and for seedlings and help reduce complexity in that one fertilizer fits all. A top dressing of 8-9month 15:5:15+Mg+TE at re-potting will help the plant to establish and maintain vigorous growth. A note of caution….Addition of slow release fertilizer to organic media will accelerate the rate of breakdown of those media. There are therefore distinct advantages in using inorganic media particularly if heavy applications of fertilizer are used. Heavy applications of slow release also seem to deter cockroaches from taking up residence in orchids potted in diatomite. The definitive studies have not been done but it is my experience that the heavier the application of slow release, the fewer the cockroach problems. This observation is confined to diatomite, certainly not to bark and charcoal, which cockies just adore. Perhaps someone should do some further investigating!

Application Rates

These depend on your particular set of growing conditions eg watering frequency and type of medium, but for most orchids growing in 7-15mm diatomite in 100mm pots, I apply a level teaspoon of 8-9mth 15:5:15+Mg+TE at each application in Spring or Autumn. For a 200mm pot containing mainly 15-25mm diatomite I increase the dose to a heaped tablespoon. For plants growing on slabs, I put the required amount of slow release in a piece of stocking and tie it to the top of the slab so that each watering provides a steady flow of nutrients to the roots below. For those who want maximum performance from their orchids, there is no cultural reason why appropriate concentrations of foliar fertilizers should not be used in conjunction with the slow release fertilizer.

The availability of a huge range of slow release fertilizers allows the selection and use of the type best suited to your conditions. Appropriate types have effectively eliminated the need for the time-consuming task of fertilizing ‘weekly, weakly’. The results speak for themselves. Next time you re-pot or plan your fertilizer schedule, maybe you should try an appropriate slow release fertilizer. You might be surprised at the results!!!

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