ZANTEDESCHIAS AS FLOWERING POT PLANTS

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As many of you are aware, *Zantedeschia* is a flowering plant that has been talked about extensively over the last three to five years. Coloured hybrids have been selected by talented growers, resulting in a variety of new colours now being available. New Zealand growers have been at the forefront, but these plants are a relatively new crop in Australia.

Zantedeschias have been a very small part of the flower industry for many years. The traditional colours grown were white (arum lily) and yellow. In one state in Australia the arum lily has been declared a noxious weed, as it has escaped into native marshland.

Zantedeschias can be considered in two main groups: (1) "Zantz," the summer-flowering group that has the greatest marketability, and (2) the cool-temperature, late autumn to early spring flowering group, the "Kiwi Calla."

Both these groups have very distinctive behaviour. The summer-flowering group does not do well under wet conditions, and is deciduous in winter. The winter-flowering group is evergreen and tolerates a wide range of conditions, including "wet feet."

Plants of this winter-flowering group have only a limited flower colour range of which greens and whites are the most common forms. The "big" or old arum lily was grown extensively and flourished in the older gardens around Australia. These plants produced very large flowers on stems up to one metre high. They proved to be a quality plant that was very reliable.

'SNOW WHITE'

'Snow White' is a form released in Australia under the name "Kiwi Calla"; it is a dwarf selection of this reliable plant which has proven to be exceptionally adaptable for containers. It is an evergreen and its flower initiation responds as the temperature drops. Flowering will cease when the temperature exceeds 20 °C.

'Snow White' has white flowers on stems approximately 50cm tall. They can be used as a patio plant, pool side plant, or an indoor flowering plant once the flowers are initiated.

'Snow White' produces a large number of mini tubers which can be easily removed from the main tuber. They are transferred to trays and grown on until they are ready for transplanting. The main tubers are usually harvested in late spring.

Potting-on is done during late summer, and the plant puts on sufficient growth to be ready for sale the next spring. To date no colour form other than white has been produced, but it will only be time before colour introductions will occur.

"ZANTZ" GROUP

The summer-flowering "Zantz" group have an extensive range of colours, with new colours continually being selected. Flower colour occurs in a very wide range from almost white through to very dark purple and almost black.

These plants are very marketable as they can easily be manipulated into flowering whenever one wishes. Research indicates that they are programmable.

Plants in the "Zantz" group grow from a tuber and have a natural growing cycle commencing in spring, flowering for 4 to 6 weeks in early summer, then remaining vegetative until the cooler months when the foliage dies down and the tubers become dormant over winter.

The tubers multiply in the ground, and the ratio of multiplication varies from cultivar to cultivar. This ratio varies from 1:1 to 1:6 but is about 1:3 on average. Similar to other plants grown from tubers, the size of the tuber determines its ability to flower, the size of the flowers, the number of flowers and the stem length.

Pre-planting dips. To ensure flowering and success of establishment in pots, it is highly recommended that after six weeks storage and just prior to planting that tubers are dipped in a 50 to 100 ppm solution of GA_{4+7}. This dip assists in:

a. flower initiation.
b. stimulation of the development of lateral or mini buds.
c. speeding up the establishment of the tubers and reducing their mortality rate.

Tissue culture. Using plant tissue culture technology it is possible to build up the number of tubers relatively quickly. Once mother stock has been achieved natural multiplication will become the main technique to increase numbers. However, this is not the end of the use of tissue culture in the propagation of these plants as it will be used to multiply virus-free stock and to rapidly increase popular cultivars. It will continue to play an important role in the propagation of "Zantz."

Storage of tubers. The performance of tubers after lifting depends largely on storage. Current work has shown that a minimum of six weeks storage is necessary for flower initiation to be completed, but there is a lack of agreement at what temperature this should occur.

There are two main schools of thought that have any credibility. These suggest that for short and long term storage the temperature should be either 12 °C or 20 °C. It has been shown that storage at low temperatures—below 10 °C is not desirable, as it appears to lead to flower abortion during storage.

Tuber size. What is the minimum size for tubers before satisfactory results can be achieved for pot culture?

From work we have done this year it is suggested that satisfactory results are mainly obtained from the largest tubers. Our work indicates that the grade #2 tubers and above are the best suited for flower pot work, i.e. tubers of 4 cm in diameter and above. These tubers are usually two or three years old before they are suitable.

The average number of flowers per tuber in pots is two to three but with some cultivars it can be as many as eight to ten.

Having achieved the goals of growing quality plants, they should be shipped to the retail stores when the first flowers begin to show colour. This will ensure the longest shelf life and maximise the value to the customer.

"Zantz" will deteriorate quickly if stored in hot, closed boxes. They really need to be shipped in environmentally controlled vehicles where the temperature is controlled at 12° to 15 °C.

Once in the store they should be put in a well lit place, kept moist, and kept away from bright, HOT positions. Drying out is harmful, as this may induce dormancy in plants that are actively growing. Conditions of low light tend to etiolate the plants and should be avoided.