

The Research of the Cultivating Technique of Calathea

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Abstract

Calathea, which is graceful in shape and plentiful in category, can be used as potted landscape and cut leaves. In order to investigate the effect of the cultivating methods to its growth, fifteen kinds of Calatheas are used as materials in this test to do the researches of adaptability, reproduction, fertilizer and shading treatment. First, we observed the adaptability of the cultivation of Calathea in Taitung, and we found out that the adaptability of nine kinds of them, including *C. insignis*, performed well. Moreover, amid them, *C. insignis*, and *C. ornata* are categories worthy of recommend in this region. Because they can be used as potted landscape or cultivated in cut leaves. The general reproduction methods of Calathea, are mainly in division and cutting. *C. roseipicta*, *C. rotundifolia* and *C. zebrina*, their division reproduction rate is the slowest. Those can be reproduced by cutting are *M. leuconeura*, *M. bicolor* and *Ctenanthe lubbersiana*.

Different kinds of liquid fertilizers would affect the growth of Calathea. If we apply N-P₂O₅-K₂O=30-10-10 on *C. rufibarba*, at early period of its growth, the plants would grow taller and remain more leaves in middle-last period. For those which are fertilized one time every one or two weeks, the plant grow taller. As for *C. makoyana*, the difference among the treatments is not significant in the early period of its growth. In the middle-last period, if we apply N-P₂O₅-K₂O=30-10-10 on it, the plant would be taller, the petiole longer and the leaf amount more. And for the one that fertilized once a week, it has the most leaves. As for *C. insignis*, the difference among the treatments is not significant in the early period of

its growth. In the middle-last period, if we apply $N-P_2O_5-K_2O=20-20-20$ on it, the plant and the petiole would be taller. But if we apply $N-P_2O_5-K_2O=30-10-10$, it would have the most leaves, and if we apply on it every three week in the last period, the leave amount would be the fewest.

C. ornata would have significant reaction toward the treatment of different amount of slow-release fertilizer in the early period of its growth. No matter for the plant height, the petiole length, the leaf length, the leaf width or the amount of the intact leaves, they all react the best to the amount of 5 gram one. Moreover, it would reduce with the increasing amount the fertilizer. As for *C. insignis*, its reaction toward different amount of fertilizer is much serious, and the amount of the wounded and withered leaves soars up with the increase of the amount of application.

Speaking of the shading, if we apply 75% on *Ctenanthe oppenheimiana*, 85% on *C. ornata*, and 95% on *C. insignis*, the growth would be the best. As for *C. ornata* one, its difference of the amount of frond and quality is not significant under the 85%, 90% and 95% shading treatment. But, if we combine every character, for example the petiole length, the leaf length, the leaf width, the leaf thickness and the vase life, it would react better with 90% shading rate and the amount would be more with 85% one. As for every character and quality of *C. insignis*, it would be better with 90%~95% shading treatment, and for the amount of frond, it would be the most with the treatment of 95% shading.

Key words: Calathea, Adaptability, Reproduction, Fertilizer, Shading.

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