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The Efforts to Fulfill the Requirement of Lily Seed Bulb and its Breeding Approach

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Abstract

In Indonesia, lily flower has a good economic value. It was cultivated by the small farmers as well as commercial farmers. Unfortunately, seed bulb procurement still depends on imported lily seed, which was so expensive and its varieties were limited. This is the reason why the small farmers cultivated only the white local lily.

Imported seed bulb which has been generated for so many years was able to be publicly multiplied and this can be used as a source for in vitro rapid multiplication research that would produce seed bulb for the small farmers. Cross breeding programme was required to produce new variety. This study has been conducted in the laboratory, screen house, and in the field. Laboratory work included: (a) in vitro multiplication that provides information about appropriate kind of explants and media that would be used as a blueprint for lily in vitro multiplication, as well as plantlets for acclimatization study, and for further multiplication; (a) in vitro conservation study is important related to the procurement of plant resources and provide information about existing interaction between medium and plantlet genotypes. On the other hand, those researches will support hybridization or cross breeding programme. Hybridization was done in the screen house. Heterogeneous F_1 's seed was cultured in vitro to provide F_1 's plantlets. The F_1 's plantlets were multiplied in vitro in order to maintain genetic variability of F_1 's plantlets, so it will create variability of population. In the screen house the acclimatization study was also conducted to provide information as a blueprint for lily plantlets acclimatization. For field study the farmers involvement was quite innovative to conduct his activities using his own special technology to cultivate lily plant, as the result of in vitro multiplication. In fact the farmer was able to show good talent to cultivate in vitro lily plant, which produce lily flower that ready to market for one planting period. The farmer was also able to help in F_1 's genotypes selection. On the following research this farmer will also engaged to produce a large number of seed bulb that will be used by other farmers. Furthermore, rapid multiplication trough callus and in vitro breeding programme would be able to be conducted.

Keywords: Breeding approach, lily, requirement of seed bulb