

Thesis Title	Growth and Development of Amaryllis Bulb	
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### **Abstract**

Studies on bulb growth and development of amaryllis, local variety and the hybrid Apple Blossom, were carried out under natural condition. Formation and growth of bulblets induced through bulb cutting, a method of propating from bulb, was also investigated. It was found that the growth cycle of the two varieties began with emergence of the inflorescence in late February for local variety and early March for Apple Blossom and the flowers were in bloom until the end of March. Vegetative growth started in late March and continued until late December. After dying back of the leaves, the underground bulbs remained dormant and resumed growth in late February.

The bulb is tunicate in structure, comprising of layers of swollen and succulent concentric scales of which the bases were attached to the basal plate. The basal plate was modified from the underground stem while the scales were from the leaf bases. The bulb was round in shape, having the scales as the food storage part. The outermost scale was dry and called tunic. The apical bud of the basal plate was the leaf bud. Lateral buds appeared alternately on the basal plate, with the one next to the apical bud being flower bud. Other flower buds occurred at every fourth scale axil away from the uppermost flower bud, while the lateral buds of the outer scales could develop and become bulblets.

New bulb were formed from layers of modified leaf bases of the growing plant surrounded by the old bulb scales. The growth of the bulb occurred alongside with that

of the leaves and ceased when the leaves died back. Some of the old bulb scales withered and deteriorated during the active growth of the plants while some still fresh and remained attached throughout the dormant period. The bulblet regenerated from the outer lateral bud of the bulb, having its leaf primordium modified as the scales.

Bulb multiplication was found comparatively higher in the local variety than in the Apple Blossom, yielding bigger new bulbs and produced bulblets while the latter obtained slightly bigger bulb size with no bulblet.

Propagation through bulb cutting and twin-scaling was proved successful in both varieties. Bulblets were formed between the scales from the basal plate tissue. Young leaves emerged from those bulblets 9<sup>th</sup> week after cutting. Bulblets were transplanted 26<sup>th</sup> week and harvested 56<sup>th</sup> week after cutting. Bulb cutting of 16 pieces per bulb gave higher average number of bulblets per bulb than those of 8 and 4, but the treatment of 4 pieces per bulb yielded higher average bulblet weight. Inner twin-scales gave better bulblet yields than those of the middle and the outer, except the outer twin-scales of the Apple Blossom that gave the highest average bulblet weight.