

Abstract

Amaryllis have life cycle starts from bulb planting in the soil, followed by growth of flower (reproductive phase) before vegetative phase and then plants become dormant. There are 3 stages of growth, i.e., 1) reproductive phase, 2) vegetative phase and 3) dormancy stage. The objectives of this research were to study and select the appropriate production method for Amaryllis cut flowers production and select chemical solution to extend vase life of Amaryllis flowers. This research were evaluated at Mae Hia Agricultural Research, Demonstrative and Training Center, Laboratory of Department of Plant Science and Soil Sciences Faculty of Agriculture Chiang Mai University and His Majesty (H. M.) The King's Initiative Center for Flower and Fruit Propagation for cooperation, Hang Dong, Chiang Mai. Research of the Amaryllis production for commercial cut flower was carried out in 4 experiments as follows:

Experiment 1: Effects of bulb sizes on growth and flower quality of amaryllis were studies (1st year). Bulbs of amaryllis 2 cultivars (Clown and Carina) were selected and divided into 5 treatments by bulb circumferences i.e., >24-26 cm., >26-28 cm., >28-30 cm., >30-32 cm. and >32 cm. The result showed that amaryllis Clown bulb circumferences of >30-32 and >32 cm. gave higher on leaves lengths and leaves numbers than other treatments. Moreover, at 24 weeks after planting (WAP) bulb circumferences of >30-32 and >32 cm. gave the higher number of shoots per cluster than bulb circumference of >24-26 and >26-28. In term of flowers quality, it was reported that bulb circumference of >32 cm. gave the shortest days to flowering and the greater of flower diameter than other treatments. Bulb circumference of >28-30, >30-32 and >32 cm. gave the higher flowering percentage (100 percentage) than bulb circumference of >24-26 and >26-28 cm. (17.0 and 75.0 percentage, respectively). In amaryllis Carina, it was found that at 20 weeks after planting (WAP) bulb circumference of >26-28 and >32 cm. gave the higher leaf length than bulb circumference of >24-26 cm. And bulb circumference >32 cm. gave the highest of leaf numbers. In term of flowers quality it was showed that bulb circumference of >32 cm. gave the shortest days to flowering, the highest stalk length and the highest flowering percentage, bulb circumference of >30-32 and >32 cm. gave the larger diameter of flower stalk than bulb circumference of >24-26 and >26-28 cm.

Experiment 2: Effect of fertilizer application method and fertilizer rates on growth and flowering of amaryllis were studied (1st year). Bulbs of amaryllis NK 2 circumferences >26 - 28 cm. were selected. Apply fertilizer once a month. The experimental design was Factorial in CRD with 2 factors; factor 1 was 2 differences levels

of fertilizer (1) fertilizer, formula 15-15-15 throughout the experiment for 6 months (2) gave the fertilizer formula 15-15-15 for 3 months and followed by fertilizer 13-13-21 for 3 months. Factor 2, the fertilizer rate of 5 levels, ie 1, 2, 3, 4 and 5 grams per plant. The result showed that at 24 weeks after planting no fertilizer treatment gave the lowest of leaves lengths, leaves numbers and number of number of shoots per cluster. In addition, at 8-20 weeks after planting, plant supplied with fertilizing rate 1 and 4 grams gave the highest of leaves length. In term of flower quality it was showed that plant supplied with 4 gram of 15-15-15 fertilizer formula for 6 month gave the highest of diameter of flower and flower stalk length.

Experiment 3: Effect of storage temperature on growth and flowering of amaryllis were studied by using bulbs of amaryllis Apple Blossom circumferences 24 cm. The experimental design was in Completely Randomized Design (CRD) with 3 difference bulbs storage temperature i.e., bulbs storage at room temperature (25 °C), 5 °C and 15 °C. Bulb were prepared by storage in each temperature for 2 months before planting. The result showed that bulbs storage at 5 °C gave the highest leaves length. While, the number of leave per plant were not significantly difference when bulbs storage at 5 °C and 15 °C. In term of flowers quality, it was found that bulbs storage at 5 °C and 15 °C gave the greater significantly result on flower inflorescence length and flower stalk length than storage at room temperature treatment.

Experiment 4: The effect of chemical solution to extend vase life of amaryllis flowers were studied by using amaryllis cultivar Carina with stalk length 40 centimeters. The experimental design was 2x2+1 Factorial in CRD with 2 factors; factor 1 was 2 differences levels of 8-HQS concentration i.e., 200 and 400 mg/l and factor 2 was 2 differences levels of AgNO₃ concentration i.e., 0 and 50 mg/l. Distilled water was used as control treatment. The result showed that, 8- HQS 200 mg/l + AgNO₃ 50 mg/l gave the longest vase life (8.7 days). Moreover, the highest fresh weight changing was observed when flower supplies solution contain 8- HQS 200 mg/l + AgNO₃ 0 mg/l. Water absorption rate was the highest in flower supplies with 8- HQS 400 mg/l + AgNO₃ 0 mg/l treatment and distilled water treatment.