

Abstract

The objectives of this research were to collection and selection varieties for commercial production of Rain lily and to study on propagation for the increase of bulbil number of Rain lily This research were evaluated at Royal Project Foundation Huayluk, Chiang dao, Chiang Mai. Research of study on collection and propagation of Rain Lily was carried out in 2 experiments as follows:

Experiment 1: Collection and selection varieties for commercial production of Rain lily were studied during February to September 2018. The research was based on the completely randomized design (CRD). Fifteen varieties of Rain lily investigated in this study including; Australia candida, Full moon, Traubii, Airie, Eastern pearl, Crimson sunset, Krakatua, Pride of singapore, Bangkok yellow, Midas touch, Bubble, Heart throb, Chai prakan sunset, Old rose rimdoi and Pink emerald. They were planted in plastics bag size 7x13 inchs and soil, rice husk charcoal, coco peat and manure ratio 1:1:1:1 were used as growing media. After planting, plant were supplied twice a month (fertilizer formula 15-15-15 for 4 months and then change to formula 13-13-21 for 4 months) and watered once every 2 days. The results showed that bulb quality before planting there were statistically significant differences in each varieties of Rain lily ($p < 0.05$). Pink emerald has the most fresh bulb weight at 19.00 grams per bulb. Krakatua has the largest diameter of the bulb at 29.40 millimeters. At 32 weeks after treatment, the obtained results showed that Pink emerald had the most plant height at 35.50 centimeters follower by Crimson sunset showed plant height at 31.41 centimeters. Bubble showed the most average number of leaves per plant at 58.00 leaves follower by Australia candida showed average number of leaves per plant at 54.66 leaves. Australia candida showed the most average number of bulbils per plant at 12.83 bulbils. And Full moon showed the most average number of flowers per plant at 9.58 flowers. However, it was observed that every varieties had germination percentage more than 85 percents.

Experiment 2: Study on propagation for the increase of bulbil number of Rain lily were studied in 2 cultivars (*Zephyranthes grandiflora* Lindl. and *Zephyranthes candida* Herb.) The research was based on the completely randomized design (CRD) and divided into 4 treatment by cutting i.e., 2 sections/bulb, 4 sections/bulb, 8 sections/bulb and normal bulb was used as control treatment. The results showed that the highest average number of leaves (18.91 leaves), total Bulb fresh weight (49.99 grams) and average number of bulbils (3.95 bulbils) were obtained from 2 sections/bulb in *Zephyranthes grandiflora* Lindl. While *Zephyranthes candida* Herb. showed cutting 4 sections/bulb and 2

sections/bulb gave the most average number of bulbils at 10.86 and 10.25 bulbils, respectively and were not significant different with control treatment (10.91 bulbils). However, the control treatment gave the most total Bulb fresh weight at 85.99 grams follower by 2 sections/bulb, 4 sections/bulb, 8 sections/bulb were 56.12, 53.03 and 48.51 grams, respectively. Thus, the cutting method by 2 sections/bulb in *Zephyranthes grandiflora* Lindl. and the cutting method by 2 sections/bulb and 4 sections/bulb in *Zephyranthes candida* Herb. were proper for propagation.

Keywords: collection, propagation, Rain Lily, bulb

