

Hormonal Regulation of Flower Quality According To the Method of Application in *Dendrobium* 'Jaq Hawaii' x *Dendrobium* 'Singapore White'

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Orchid cut flower industry plays a highly competitive role in global trade. Increased number of new entrants within the last decade has led to a tight competition. Consequently, the product quality standards have been upgraded. Inability to achieve specific quality requisites set by international floral auctions has become a major obstacle to increase local share in global trade. Diurnal Temperature Variation (DTV) of 10-12 °C is ideal to increase quality and quantity of orchid flowers. Due to sudden daytime rains in highest orchid producing areas of Western Province, do not allow plants to be exposed to required DTV. Therefore, the present experiment was conducted at Sumudu Orchids, Padukka (Mid Country Wet Zone) under 50% shade level to investigate the effect of plant growth regulators on enhancing flower quality. Sole and combination effects of Gibberelin A₃ (GA₃) and 6-Benzylaminopurine (6BA) were tested according to drench and spray mode of application on intergenera, *Dendrobium* Jaq Hawaii x *D. Singapore White*. The experiment was arranged with Randomized Complete Block Design and each treatment combination contained five replicates with four plants per each. Data on average petal length, petal width, sepal length, sepal width, labellum length and labellum width, area of flower and internode length were collected on the fourth day after full blooming. Time taken for blooming was calculated starting from when the flower bud reached 3 mm diameter to full blooming. Sole application of 125 mg/L GA₃ increased petal length, sepal length and labellum length whereas, 200 mg/L 6BA increased the petal width, sepal width, labellum width and area of flower. Reduced internode length was observed in every treatment which contained 125 mg/L GA₃. Both sole application of 125 mg/L GA₃ and combination of 125 mg/L GA₃ with 200 mg/L 6BA were able to reduce days taken for blooming. Internode length and ratio between length and width of petal, sepal and labellum were minimum at 200 mg/L 6BA. It enriches the visual appearance. Between the modes of applications, spraying was found to be the best. Therefore spraying 200 mg/L 6BA can be suggested as a potential treatment to increase flower quality in *D. Jaq Hawaii* x *D. Singapore White*.

Keywords: *Dendrobium*, drench, flower quality, plant growth regulators, spray