

ABSTRAK

Amna Kamran Br. Tarigan, NIM 4191220010 (2023). Pengaruh Pemberian Ekstrak Tomat (*Solanum lycopersicum* L.) dan ZPT BA Terhadap Induksi Tunas Anggrek *Cattleya* sp. Secara *In Vitro*

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian zat pengatur tumbuh BA (Benzyladenine), ekstrak tomat dan interaksi keduanya terhadap pertumbuhan tunas anggrek *Cattleya* sp. secara *in vitro*. Penelitian ini dilakukan di Laboratorium Kultur Jaringan Tanaman YAHDI pada bulan Maret-Juli 2023. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) faktorial dengan dua faktor. Faktor pertama BA yang terdiri dari 3 taraf yaitu (0, 2, dan 4 ppm) dan faktor kedua ekstrak tomat yang terdiri dari 4 taraf yaitu (0, 5, 10, dan 15%). Diperoleh 12 kombinasi perlakuan dan masing-masing perlakuan diulang sebanyak 3 kali sehingga diperoleh 36 unit percobaan. Parameter dalam penelitian yaitu waktu munculnya tunas, jumlah tunas, jumlah daun, tinggi planlet, waktu munculnya akar, dan jumlah akar kemudian dianalisis dengan *Analysis of Variance* (ANOVA) dan apabila berbeda nyata maka dilakukan uji lanjut dengan Duncan Multiple Range Test (DMRT) pada taraf 5%. Penelitian ini menunjukkan hasil waktu munculnya tunas tercepat pada perlakuan BA 4 ppm (2 MST). Jumlah tunas dan daun terbanyak yaitu pada perlakuan BA 4 ppm (4,00 tunas dan 15.67 daun). Rataan tinggi planlet tertinggi pada perlakuan BA 4 ppm (3.30 cm). Jumlah akar terbanyak dihasilkan pada perlakuan BA 4 ppm (7,00 akar). Waktu munculnya tunas tercepat pada perlakuan ekstrak tomat 5% (3 MST). Jumlah tunas dan daun terbanyak pada perlakuan ekstrak tomat 10% (2.33 tunas dan 9.33 daun). Rataan tinggi planlet tertinggi pada perlakuan ekstrak tomat 10% (1.87 cm). Jumlah akar terbanyak dihasilkan pada perlakuan ekstrak tomat 10% (2,00 akar). Waktu munculnya tunas tercepat pada perlakuan B2T10 (2 MST). Jumlah tunas dan daun terbanyak pada perlakuan B2T10 (5,00 tunas dan 17.67 daun). Rataan tinggi planlet tertinggi pada B4T10 (2,87 cm).

Kata kunci: BA, *Cattleya* sp., *In Vitro*, *Solanum lycopersicum* L

ABSTRACT

Amna Kamran Br. Tarigan, NIM 4191220010 (2023). The Effects of Applying Tomato Extract (*Solanum Lycopersicum* L.) and BA on *In Vitro* Shoot Induction of *Cattleya Sp.* Orchid

This study was aimed to determine the effect of giving the growth regulator BA (Benzyladenine), tomato extract and the interaction of the two on the growth of *Cattleya* sp. orchid shoots in vitro. This research was conducted at the YAHDI Plant Tissue Culture Laboratory in March-July 2023. This research used a factorial Completely Randomized Design (CRD) with two factors. The first factor is BA which consists of 3 levels, namely (0, 2, and 4 ppm) and the second factor is tomato extract which consists of 4 levels, namely (0, 5, 10, and 15%). 12 treatment combinations were obtained and each treatment was repeated 3 times to obtain 36 experimental units. The parameters in the research, namely the time of shoot emergence, number of shoots, number of leaves, plantlet height, time of root emergence, and number of roots were then analyzed using Analysis of Variance (ANOVA) and if they were significantly different, further testing was carried out using the Ducan Multiple Range Test (DMRT) on level 5%. This research shows the results of the fastest shoot emergence time in the BA 4 ppm (2 MST) treatment. The highest number of shoots and leaves was in the 4 ppm BA treatment (4.00 buds and 15.67 leaves). The highest average plantlet height was in the BA treatment of 4 ppm (3.30 cm). The highest number of roots was produced in the 2 ppm and 4 ppm BA treatments (7.00 roots). The fastest shoot emergence time was in the 5% tomato extract treatment (3 MST). The highest number of shoots and leaves was in the 10% tomato extract treatment (2.33 buds and 9.33 leaves). The highest mean plantlet height was in the 10% tomato extract treatment (1.87 cm). The highest number of roots was produced in the 10% tomato extract treatment (2.00 roots). The fastest shoot emergence time was in the B2T10 treatment (2 MST). The highest number of shoots and leaves was in the B2T10 treatment (5.00 buds and 17.67 leaves). The highest average plantlet height was B4T10 (2.87 cm).

Keywords: BA, *Cattleya* sp., In Vitro, *Solanum lycopersicum* L