

## RINGKAKASAN

Tanaman sawi pagoda (*Brassica rapa L.ssp. Narinosa*) merupakan salah satu sayuran yang cukup diminati masyarakat. Budidaya sawi pagoda secara hidroponik berpotensi dikembangkan karena lebih hemat tenaga kerja. Salah satu sistem budidaya hidroponik yang paling mudah digunakan adalah sistem *wick*. Keberhasilan budidaya tanaman secara hidroponik ditentukan oleh media dan nutrisi yang diberikan. Nutrisi AB Mix adalah nutrisi yang mengandung unsur makro dan mikro yang dikombinasikan sedemikian rupa sebagai nutrisi. harga jual larutan AB Mix yang masih tinggi membuat biaya produksi juga ikut meningkat. Upaya yang dilakukan untuk membantu meningkatkan pertumbuhan tanaman adalah dengan pemberian bakteri penghasil IAA.

Penelitian ini telah menggunakan Rancangan Acak Kelompok (RAK) ini terdiri dari 2 faktor perlakuan. Faktor pertama yaitu jenis isolat bakteri penghasil IAA, yang terdiri atas tanpa isolat bakteri, isolat S3, N15 dan N19. Faktor kedua pengurangan dosis AB Mix, yaitu pengurangan 0%, 25% dan 50%. Berdasarkan faktor tersebut, maka diperoleh 12 kombinasi perlakuan. Setiap perlakuan dilakukan pengulangan sebanyak 3 kali sehingga terdapat 36 unit percobaan. Penelitian ini dilaksanakan pada bulan September 2023 sampai November 2023. Variabel yang diamati yaitu tinggi tanaman, jumlah daun, luas daun, panjang akar, volume akar, kandungan klorofil, bobot tanaman segar, bobot tanaman kering, bobot akar segar, bobot akar kering, bobot tajuk segar, bobot tajuk kering, kerapatan stomata, bukaan stomata, kehijauan daun dan uji bakteri penghasil IAA pada nutrisi AB Mix. Data hasil pengamatan dianalisis menggunakan uji ANOVA dengan tingkat kesalahan 5%.

Pemberian bakteri penghasil IAA isolat S3 memberikan pengaruh terbaik pada variabel bobot tajuk segar (45,74 g), bobot kering tanaman (4,46 g), dan bobot tajuk kering (3,41 g), dan bukaan stomata (21,66  $\mu\text{m}$ ). Isolat N19 memberikan pengaruh terbaik pada variabel kerapatan stomata (344  $\text{mm}^{-2}$ ), bukaan stomata (21,66  $\mu\text{m}$ ), dan panjang akar (28,42 cm). Pengurangan dosis AB Mix 0% (1100 ppm) memberikan hasil terbaik pada variabel jumlah daun 6 MST (30,81 helai), luas daun (600  $\text{cm}^2$ ), kandungan klorofil (33,79 mg/L), bobot tajuk segar (42,21 g), bobot tajuk kering (3,10 g), dan kehijauan daun (58,06 unit). Pengurangan dosis AB Mix 50% (510 ppm) memberikan hasil terbaik pada variabel panjang akar (26,85 cm), tinggi tanaman 6 MST (13,99 cm). Pemberian bakteri penghasil IAA isolat N19 dan pengurangan dosis AB Mix 0% dapat memberikan pertumbuhan yang optimum dengan hasil paling baik pada kandungan klorofil (35,03 mg/L), kerapatan stomata (385,99  $\text{mm}^{-2}$ ), bobot kering tanaman (5,01 g), kehijauan daun (63,70 unit), bobot akar kering (1,22 g). Perlakuan isolat N19 dan pengurangan dosis AB Mix 25% dapat dijadikan alternatif untuk menghemat biaya produksi dengan memberikan hasil paling baik pada bukaan stomata (23,33  $\mu\text{m}$ ) dan bobot tajuk segar (54,02 g).

## SUMMARY

*Pagoda mustard (Brassica rapa L.ssp. Narinosa) is one of the most popular vegetables in the community. Hydroponic cultivation of pagoda mustard has the potential to be developed because it is more labour-efficient. One of the easiest hydroponic cultivation systems to use is the wick system. The success of hydroponic cultivation is determined by the media and nutrients provided. AB Mix nutrition is a nutrient that contains macro and micro elements that are combined in such a way as nutrients. the selling price of AB Mix solution which is still high makes production costs also increase. Efforts made to help increase plant growth is by giving IAA-producing bacteria.*

*This research has used a Randomised Group Design (RAK) consisting of 2 treatment factors. The first factor is the type of IAA-producing bacterial isolate, which consists of no bacterial isolate, isolate S3, N15 and N19. The second factor is the reduction of AB Mix dosage, which is 0%, 25% and 50% reduction. Based on these factors, 12 treatment combinations were obtained. Each treatment was repeated 3 times so that there were 36 experimental units. This research was conducted from September 2023 to November 2023. The variables observed were plant height, number of leaves, leaf area, root length, root volume, chlorophyll content, fresh plant weight, dry plant weight, fresh root weight, dry root weight, fresh crown weight, dry crown weight, stomatal density, stomatal openings, leaf greenness and IAA-producing bacteria test on AB Mix nutrition. Observation data were analysed using ANOVA test with 5% error rate.*

*Giving IAA-producing bacteria isolate S3 gives the best effect on the variable fresh crown weight (45.74 g), plant dry weight (4.46 g), and dry crown weight (3.41 g), and stomatal openings (21.66  $\mu\text{m}$ ). Isolate N19 gave the best effect on stomatal density variables (344  $\text{mm}^{-2}$ ), stomatal aperture (21.66  $\mu\text{m}$ ), and root length (28.42 cm). AB Mix dose reduction of 0% (1100 ppm) gave the best results on the variable number of leaves 6 weeks after planting (30.81 strands), leaf area (600  $\text{cm}^2$ ), chlorophyll content (33.79  $\text{mg/L}$ ), fresh crown weight (42.21 g), dry crown weight (3.10 g), and leaf greenness (58.06 units). Reduction of AB Mix dosage by 50% (510 ppm) gave the best results on root length variable (26.85 cm), plant height 6 weeks after planting (13.99 cm). The application of IAA-producing bacteria isolate N19 and a reduced dose of AB Mix 0% can provide optimum growth with the best results on chlorophyll content (35.03  $\text{mg/L}$ ), stomatal density (385.99  $\text{mm}^{-2}$ ), plant dry weight (5.01 g), leaf greenness (63.70 units), dry root weight (1.22 g). The treatment of isolate N19 and a 25% reduction in AB Mix dosage can be used as an alternative to save production costs by providing the best results in stomatal aperture (23.33  $\mu\text{m}$ ) and fresh crown weight (54.02 g).*