INFLUENCE OF BIO-REGULATORS ON MORPH-PHYSIOLOGICAL TRAITS OF PEPPERMINT (MENTHA PIPERITA L.)

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Peppermint (Mentha piperita L.) is a valuable medicinal plant that can be used in numerous forms i.e. essential oil, leaf, and leaf extract. This herbal preparation is used in cosmeceuticals, personal hygiene products, foods, and pharmaceutical products for both its flavoring and fragrance properties [1, 2]. According to the importance of peppermint, the evaluation of bio-regulators effects on its growth and development is necessary. This study was aimed to investigate the effect of bio-regulators including gibberellic acid (GA3), indole butyric acid (IBA) and methanol (MeOH) on morphophysiological traits of peppermint. This study was done in a randomized complete block design (RCBD) with 10 treatments and 3 replications at research greenhouse of Institute for Medicinal Plants, ACECR. The treatments was consisted of control or distilled water (A1), 5% v/v of methanol solution (A2) (MeOH), 40 ppm of gibberellic acid (GA3) + 5% v/v of methanol (A3) (MeOH), 80 ppm of gibberellic acid (GA3) + 5% v/v of methanol (A4), 40 ppm of indole butyric acid (IBA) + 5% v/v of methanol (A5), 80 ppm of solution indole butyric acid (IBA) + 5% v/v of methanol (A6), 40 ppm solution of gibberellic acid (GA3) + 80 ppm indole butyric acid (IBA) + 5% v/v of methanol (A7), 80 ppm of gibberellic acid (GA3) + 40 ppm indole butyric acid (IBA) + 5% v/v of methanol (A8), 40 ppm of gibberellic acid (GA3) + 40 ppm of indole butyric acid (IBA) + 5% v/v of methanol (A9), 80 ppm of gibberellic acid (GA3) + 80 ppm of indole butyric acid (IBA) + 5% v/v of methanol (A10). The results showed that the bio-regulators had significant effect (p ≤0.05) on morpho-physiological characteristics such as plant height, leaf width, lateral shoots No, leaf fresh weight, root fresh weight, number of internodes, leaf dry weight and stem dry weight of peppermint. Pearson correlation coefficients showed that the dry weight of leaf showed a significant positive correlation with leaf length, leaf width and petiole length. In general, the bio-regulators can be increase the plant morpho-physiological and biomass of peppermint.

References