Abstract

On Augmenting Growth, Photosynthesis, Enzymatic Activities and Nutrient Contents of *Brassica juncea* (L.) by the Application of Plant Growth Regulators [†]

Shaistul Islam and Firoz Mohammad *

Plant Physiology and Biochemistry Section, Department of Botany, Faculty of Life Sciences,
Aligarh Muslim University, Aligarh 202002, India; shahidbhat78303@gmail.com

* Correspondence: Firoz_59@rediffmail.com

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Abstract: In a simple randomized pot experiment, the effect of nine plant growth regulators (PGRs), namely benzyl amino purine, chlormequat, gibberellic acid, indole acetic acid, indole butyric acid, kinetin, methyl jasmonate, salicylic acid, and triacontanol was studied on growth and physio-biochemical performance of mustard (*Brassica juncea* L.) Plants were sprayed with a uniform concentration of PGRs each at 5 µM twice at 50 and 70 days after sowing (DAS). At 80 DAS, various parameters were studied. The data showed varied effects of PGRs on the various studied parameters. Among the PGRs, salicylic acid proved best for most of the parameters; for example, it increased root length by 35.92%, shoot length by 26.56%, root fresh mass by 33.15%, shoot dry mass by 31.86%, root dry mass by 37.09%, area per leaf 27.05%, chlorophyll content by 29.04%, photosynthetic rate by 29.91% and carbonic anhydrase activity by 28.82%. Gibberellic acid surpassed others for leaf relative water content, leaf phosphorous and potassium content. Moreover, triacontanol gave the maximum value for nitrate reductase activity and leaf nitrogen content. The data revealed the overall superiority of salicylic acid for improving the growth and physio-biochemical performance of mustard.

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