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## Effect of plant bio-regulators on the growth, yield and physico- chemical characteristics of onion (*Allium cepa* L.)

■ SANJAY KUMAR<sup>1</sup>, SUTANU MAJI AND KAMAL RAM MEENA<sup>1</sup>

**Members of the Research Forum**

**Associated Authors:**

<sup>1</sup>Department of Applied Plant Science (Horticulture), Babasaheb Bhimrao Ambedkar University, LUCKNOW (U.P.) INDIA

**ABSTRACT :** This experiment was held to study about the efficacy of concentration of plant bio regulators on vegetative growth, yield and quality characters of onion cv. NHRDF-RED-2 under Lucknow subtropical condition having dry climate and high pH soil (8.2). The experiment comprised of 13 treatments [Control (water spray), GA<sub>3</sub> @ 50, 100 ppm, 150 ppm; NAA @ 50 ppm, 100 ppm, 150 ppm and combination of GA<sub>3</sub> and NAA] laid out in the Randomized Block Design with three replications. The observations revealed that the application of T<sub>11</sub> [GA<sub>3</sub> @ 100 ppm + NAA @ 100 ppm] was better for improvement of growth *i.e.* plant height (76.50 cm), number of leaves (8.27), length of leaves (60.60) and basal diameter (2.05 cm) at 90 DAT. It also recorded the highest bulb yield (60.34 t/ha), fresh weight (90.51 g), dry weight (10.89 g), diameter (6.87 and 6.87 cm equatorial and polar, respectively) of onion bulb. Similarly, chemical properties like TSS (12.03<sup>0</sup> B) and pH (6.99) was found better under treatment T<sub>11</sub> (GA<sub>3</sub> @ 100 ppm + NAA @ 100 ppm) followed by T<sub>9</sub> (GA<sub>3</sub> @ 50 ppm + NAA @ 150 ppm). Thus, the study suggested that combined application of bio regulators (GA<sub>3</sub> @ 100 ppm + NAA @ 100 ppm) may be followed to get better growth, yield and quality of onion cv. NHRDF-RED-2 under drier subtropical climate.

**KEY WORDS :** Bio-regulators, GA<sub>3</sub>, Growth, NAA, Onion, Quality, Yield

**Author for correspondence :**

SUTANU MAJI

Department of Applied Plant Science (Horticulture), Babasaheb Bhimrao Ambedkar University, LUCKNOW (U.P.) INDIA

Email : [majisutanu@gmail.com](mailto:majisutanu@gmail.com)

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