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Effect of plant growth regulators on morphophysiological and yield parameters of some sesame (*Sesamum indicum* L.) cultivars

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The present experiment was conducted in the central farm, OUAT during Rabi season 2014-15 with five sesame varieties viz. Uma, Amrit, Smarak, Prachi and Nirmala to find the efficiency of growth regulators such as NAA, GA_3 and IAA in two concentrations of 10 ppm and 20 ppm sprayed at 30 and 45 days after sowing (DAS). The experiment was laid out in split plot design with three replications. The morphophysiological observations were recorded at different stages of growth with all varieties due to effect of growth regulators. Significant increase was observed in response to growth regulator on germination of seeds. The highest percentage of seed germination was recorded in GA_3 at 20 ppm (98.51%). Due to spraying of growth regulators there was increase of plant height, number of branches and leaf area per plant in all the treatments irrespective of variety and the highest value was exhibited by Nirmala with regards to above characters. The LAI, RGR, NAR, CGR & LAD were found to be increased in PGRs treatments over the control. Among the varieties Nirmala exhibited highest value followed by Amrit. The yield attributing characters such as total dry matter, number of capsules/plant, number of seeds per capsules and 1000 seeds weight were significantly increased among the treatments as well as varieties. Due to the spraying of Plant Growth Regulators (PGRs) the percentage of increase in yield ranged from a tune of 0.5% in GA_3 at 10 ppm conc. to 24% in GA_3 at 20 ppm conc. over the control. Among the varieties the highest yield was noted in Nirmala (5.60 q/ha) followed by Amrit (5.08 q/ha). In view of the present findings, Nirmala was found to be the highest yielder and higher concentrations of plant growth regulators were found to be more significant over the control.

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