

EFFECT OF NITROGEN FIXING BACTERIA ON TILLERING, PHOTOSYNTHETIC RATE AND CHLOROPHYLL CONTENT IN PLANT GROWTH REGULATOR INDUCED NODULATED WHEAT

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Abstract: Under laboratory conditions the seedlings were raised to induce the nodule-like out growths using different growth regulators 2, 4-D (0.5 ppm), IBA (8 ppm) and NAA (8 ppm) in nitrogen free Hoagland solution. The seedlings were inoculated with bacterial culture such as *Azorhizobium caulinodans* (ORS 571) and *Nostoc* (mixed strains) in wheat variety C-306. Another set was raised with *Azorhizobium caulinodans* and *Nostoc* without plant growth regulators as uninoculated control. The treated paranodulated wheat seedlings were transferred to pots. The data collected on 60 days after transplanting revealed that the plants treated with *Nostoc* either alone or with different growth regulators had higher tiller number, chlorophyll content and leaf area per plant. The maximum effect was observed with IBA + *Nostoc* followed by 2, 4-D and NAA as compare to *Nostoc* treated plants. The *Azorhizobium caulinodans* treated plants were also better than control; it was also observed that the photosynthetic rate was maximum with 2, 4-D treated plants followed by *Azorhizobium caulinodans* and *Azorhizobium caulinodans* with NAA and IBA. The biomass production was maximum in *Azorhizobium caulinodans* treated plants followed by *Nostoc* along with growth regulators; however IBA and *Azorhizobium caulinodans* gives the maximum biomass production.

Keywords: Plant growth regulators, *Azorhizobium caulinodans*, *Nostoc*, Nodulation, Photosynthesis, Chlorophyll content, Tiller number

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