Abstract: Nodule like outgrowths were introduced under laboratory condition using plant growth regulators 2, 4-D, IBA and NAA in nitrogen free Hoagland solution in wheat variety C-306. These were then inoculated with bacterial cultures of Azorhizobium caulinodans (ORS 571) and Nostoc. After induction of nodules and bacterial inoculation seedlings were transferred to pots (50 x 50 x 50 cm) under natural conditions. The nodule induction with 2, 4-D (0.5 ppm) was better than IBA (8 ppm) and NAA (8 ppm). The nitrogenase activity was relatively more in 2, 4-D + Azorhizobium in nitrogen free Hoagland solution than any other treatments. The colonization of nodule by Azorhizobium caulinodans was more than Nostoc. After transplanting to pots the IBA treated plants showed higher chlorophyll content, photosynthetic rate and stomatal conductance. Treatment with IBA + Azorhizobium showed more growth than treated with 2,4-D and NAA. However the protein content was more in 2,4-D treated with Azorhizobium. The enhanced NPK content in grain and straw due to inoculation confirms the nitrogen fixation and its remobilizations to different plant parts.

Keywords: Synthetic auxin, Azorhizobium caulinodans, Nostoc, Nodulation, Photosynthesis.

REFERENCES


