

ROLE OF AZOTOBACTER AND NITROGEN ON PLANT GROWTH, YIELD AND NITROGEN CONTENT IN OKRA LEAVES

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ABSTRACT: The aim of the present study is to minimize cost of nitrogenous fertilizers and to increase growth and nitrogen content in okra by application of lower doses of nitrogen in combination with *Azotobacter*. A simple randomized pot experiment was conducted at Gandhi Faiz-e-Aam College, Shahjahanpur during January to March-2011. Two controls were set, one without nitrogen and *Azotobacter* and another without nitrogen but with *Azotobacter* to compare the effect of *Azotobacter* alone and in combination with various nitrogen doses. The nitrogen was estimated in dry leaves at 15, 30 and 45 days after germination (DAG) stages. All the treatments of nitrogen and *Azotobacter* seed inoculation gave significantly higher growth, yield and nitrogen content in the leaves of okra. The maximum plant growth, yield and nitrogen content in okra leaves were reported in plants receiving $N_{22.5} + Azotobacter$. The minimum values of above parameters were reported in control ($N_0 + B_0$) where no nitrogen and *Azotobacter* was applied. Therefore, it can be recommended that use of lower doses of nitrogen with *Azotobacter* seed inoculation improved the nitrogen content of leaves in okra plants which help in enhancing yield of the crop. On the other hand, a large amount of nitrogen fertilizer is also saved thereby decreasing the cost of production of crop.

Key words: *Azotobacter, nitrogen, plant growth, yield, okra*