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RESEARCH ARTICLE

Impact of sulphur dioxide concentration on growth and biochemical attributes of *Vicia faba* (L.)

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SUMMARY

Air Pollution has become the major problem for the world among other pollutions. The main sources of air pollutions are rapid economic growth, urbanization and industrialization. Sulphur dioxide SO_2 formerly viewed as the most valuable pollutant around the world. SO_2 enters into leaves primarily in gaseous form through the stoamata, although there is evidence for lilmited pathway via cuticle. High concentration of sulphur dioxide can produce acute injury in the form of foliar necrosis, even after relatively short duration exposure. *Vicia faba* is one of the most important winter crop of high nutritive value in the world. The present study was designed to ascertain the impacts of sulphur dioxide SO_2 pollution on *Vicia faba* plant. The present experiments was performed on the crop plant *Vicia faba* L. The monitoring of ambient air of selected sites of the Meerut city was done and the monthly mean values of sulphur dioxide ranged between 150 to 800 μgm^{-3} in winter was observed. The entire experiment was conducted with keeping the sulphur dioxide concentration below and high to the mean value of ambient air to ascertain the impacts on the selected crop plants. Ecophysiological parameters were measured and results show drastic changes especially on the higher sulphur dioxide concentrations. Plant were found to survive in moderate concentrations *i.e.*, 2612 μgm^{-3}. Biomass and root to shoot length of plants were observed to be in negative correlation with the SO_2 concentration. Chlorophyll a and b along with total chlorophyll content were found to reduce significantly on exposure of pollutant gas. Oxidative stress was also found severe in the extreme conditions in the plants which were indicated with the lipid peroxidation.

Key Words : RL, SL, LN, RB, SB, LA, *Vicia faba*

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