New Agriculturist, **25**(1) : 33-41, 2014

Phytotoxic effect of wastewater on seed germination and early growth of *Lycopersicon esculentum* and *Oryza sativa*

Arti Yadav, Pramod Kumar Singh and D.N. Shukla

ABSTRACT : This paper describes the effect of wastewater on seed germination and seedling growth of *Lycopersicon esculentum* and *Oryza sativa* under laboratory conditions, which is utilized for irrigation in urban and rural areas of Allahabad district. The effect of different effluents was compared to that of control (distilled water). The undiluted wastewater of urban drains was high in BOD, COD, EC and total dissolved solids in comparison to wastewater of rural drains. Germination percentage and seedling growth of both the plant showed considerable reduction in case of undiluted wastewater of all drains. The diluted wastewater also showed inhibitory effect upto some extent, root and shoot length of *Lycopersicon esculentum* seedling reduced up to 36.21% and 25.62%, respectively while in *Lycopersicon esculentum* the reduction up to 20.84% and 32.93% in undiluted wastewater of Mawaiya as compared to control. Minimum reduction in root and shoot length was observed in diluted wastewater in both *Lycopersicon esculentum* and *Oryza sativa*. Maximum phytotoxicity was observed in undiluted wastewater of Mori gate drain for *Oryza sativa* and *Lycopersicon esculentum*. 50% diluted wastewater of Mawaiya drain and Bairagiya drain showed minimum phytotoxicity. *Lycopersicon esculentum* was found more sensitive towards wastewater application as compared to *Oryza sativa* in laboratory conditions.

Key Words: Wastewater, ***Lycopersicon esculentum, Oryza sativa,*** seed germination, phytotoxicity**.**