

Short Communication

Effect of an alkylating agent [mms] on germination of *Lycopersicon esculentum* cv. PUSA EARLY DWARF

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ABSTRACT

Studies were carried out to investigate the germination of *Lycopersicon esculentum* var. Pusa Early Dwarf raised from seeds treated with different concentrations (0.1%, 0.2%, 0.3%, 0.4%) of Methyl Methane Sulphonate (mutagen). Germination percentage increased in seeds treated with 0.1% MMS but thereafter decreased at higher concentrations (0.2% to 0.4%).

Key words: *Lycopersicon esculentum*, MMS, Germination percentage.

Lycopersicon esculentum (family solanaceae) is an economically and medicinally important plant, which is grown extensively throughout the world. Mutagens are known to induce many changes in the morphology and physiology of plants besides other mutagenic effects. Effect of gamma rays, EMS, N-nitro and N-methyl urea on *Cajanus cajan* has been studied (Chaturvedi *et al.*, 1982). Effects of physical and chemical mutagens have also been studied (Swaminathan 1966, Dhamvanthi *et al.*, 2000). Effects of gamma rays and MMS on *Capsicum annum* have been studied by Zeerak, 1992, Anis *et al.*, 2000 respectively.

Gamma rays and EMS induced genetic variability for quantitative traits in *Vigna munga* were reported by Singh *et al.*, 2000. In the present investigation effect of an alkylating agent (MMS) on germination of *Lycopersicon esculentum* var. pusa early dwarf has been studied.

MATERIALS AND METHODS

Seeds of *Lycopersicon esculentum* var. 'Pusa Early Dwarf' were obtained from 'National Seed Corporation,

Jaipur'. The plants were raised in the Botanical garden of Department of Botany, University of Rajasthan, Jaipur.. Dry seeds were soaked in glass distilled water for 24 hours. They were then transferred to freshly prepared solution of MMS in four different concentrations (0.1, 0.2, 0.3, 0.4 percent). A control was run alongwith, using distilled water.

Chemical treatment was given for a period of 4 hours at room temperature (23°C), thereafter seeds were washed with distilled water and air dried before sowing. Experiment was set in triplicate using 50 seeds per replicate. Control was run simultaneously. Daily observations were made and the data on time of initiation, time of maximum germination in days and germination percentage were collected and tabulated (Table I).

RESULTS AND DISCUSSION

Germination :

Time of initiation, day of maximum germination from the date of sowing of seeds and germination percentage were used as parameters to study the effect of MMS. Concentration 0.4% of MMS was found to be

Table 1 : Data on Germination of *Lycopersicon esculentum*

Concentration MMS (%)	Time for initiation (days)	Time for max. Germination (days)	Germination Percentage (%)
Control	VIII	XI	70.00
0.1	VI	X	75.00
0.2	VIII	XIV	57.33
0.3	IX	XIII	44.00
0.4	IX	XII	34.66

* Author for corresponsence.