

Effects of Chlor-Alkali Plant Effluent on Seed Germination and Early Growth Performance of Soyabean, Tomato and Methie

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Abstract- Effect of Chlor-alkali plant was studied on the seed germination and early performance of soyabean (*Glycine Max*) Tomato (*Lycopersicum esculentum*) and Methie (*Irigonella Foinumgraecum*) seeds. It was found the chlor-alkali plant effluent was highly dieterious for germination and early growth performance of seeds as campared to control germination. Co-efficient of co-relation was calculatd between the germination and increasing concentration of effluent. All the values showed negative co-relation. The relative toxicity of the effluent to all the seeds was as follows :-
25% < 45% , 65% , 85% < 100%

Index Terms- Chlor-alkali plant effluent, Growth performance seeds, co-relation.

I. INTRODUCTION

Industrial effluent pollution has received considerable attention. Its effect on seed germination and growth performance and physiology of various organisms have been investigated (S.P. Singh 995, R.K. Shrivastava 1991, K.C. Mathur 1984, Rajannan and Oblisami 1979). The present study attempts to find out the effect of chlor-alkali plant effluent on germination and early growth performance of seeds above mentioned.

II. MATERIALS AND METHODS

Chlor-alkali plant effluent was collected from three different sampling for Physico-chemical characteristics Chlor-alkali plant effluent is turbid white and highly alkaline.

Healthy seeds of above mentioned were soaked separately in the Chlor-alkali plant effluent solutions (10, 25, 45, 65, 85 and 100%) along with the control for the whole night.

25 ml of each solution mentioned above were used to soak the filter paper in each of the neat and clean petridish. Triplicate sets of petridish for each solution were prepared. The seeds were spread at the rate of 100 per petridish, 300 seeds of each species were tested for each concentration. A control germination was also run simultaneously. From the fifth day of the sowing of the seeds the germination was studied and was carried out for nine days. Average % of five days germination was taken for discussion.

III. DISCUSSION

The Chlor-alkali plant effluent eas toxic than other effluent the % germination was more with lower concentration. On 10% chlor-alkali plant effluent the % germination of *Glycine max*, *Lycoperium esculentum* and *Trigonella foinumgraecum* were higher with respect to higher concentration of effluents. The % germination of all the species was inhibiting from 10% to 100% effluent when it was compared with the speed germination of the control condition.

% of Chlor-Alkali Plant effluent	Glycine Max					Seeds Lycopersicum					Trigonella Goinungraecum				
	Days					Days					Days				
	5	6	7	8	9	5	6	7	8	9	5	6	7	8	9
10	35	35	45	75	75	37	39	45	50	50	55	60	60	60	60
25	30	31	42	55	55	35	38	39	45	45	52	52	52	52	52
45	26	26	40	48	48	30	30	35	35	35	40	40	40	40	40
65	20	20	25	25	25	23	23	24	24	24	25	25	25	25	25
85	15	15	15	15	15	18	18	20	20	20	18	18	18	18	18
100	10	10	10	10	10	12	12	14	14	14	9	9	9	9	9
CONTROL	85	95	95	95	95	85	85	90	90	90	95	95	95	95	95

AVERAGE % GERMINATION OF SEEDLINGS

% of Chlor-alkali plant effluent	Glycine Max	Lycopersicum Esculentum	Trigonella Foinumgrecum
10	55	44.2	59
25	42.6	40.4	52
45	37.2	33	40
65	23	23.6	25
85	15	19.2	18
100	10	13.2	0.9
CONTROL	93	87	95

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