# INFLUENCE OF NITROGEN AND ZINC APPLICATION WITH DIFFERENT WATER SALINITY ON GROWTH, YIELD AND NUTRIENT UPTAKE OF RICE

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**Abstract :** A pot experiments was conducted with three doses of Nitrogen Viz 60, 120, 180 $kgha^{-1}$ , four doses of Zinc Sulphate i.e, 0, 25, 50, 75 $kgha^{-1}$ and three levels of EC i.e., 0, 8, 16 $dSm^{-1}$ during kharif season of 1998 and 1999.The plant height and grain and straw yield decreased significantly over untreated ones. The mean reduction was noted with $E_2$ (16 $dSm^{-1}$) higher levels of salinity. The higher levels of Nitrogen and Zinc Sulphate enhanced significantly the plant height, growth and yield grain & straw yield of rice crops. Nitrogen application @ 120 $kgha^{-1}$ ($N_2$) more grain yield to extent of 23.57 and 26.94 % in previous year and second year over 60 $kgha^{-1}$ ($N_1$)and Zinc Sulphate @ 50 Kg $ha^{-1}$ ($Zn_3$)increased grain yield to extent 44.20 and 40.93 % in previous year and second year over to control ($Zn_0$) respectively. The uptake values of all nutrients decreased significantly with higher levels of saline irrigation water over lower levels of salinity. The N,P,K Na and Zn uptake by grain and straw were increased with enhancing dose of Nitrogen.

**Keywords :** Salinity, Grain, Straw, yield, Uptake values, Nitrogen, Zinc

## REFERENCE

**Amerjeet, S., Bali, M., Siddiqe, B.A., Ganai, H.V., Khanna, Singh, K.N. and Bali, A.S.** (1995). Response of rice (Oryza Sativa) genotytpes to Nitrogen levels under transplanted condition in Kashmir valley. ***Indian J. Agron***. , **40** (1) : 35-37.

**Gill, R.S. and Singh, Hardeep.** (1978). Effect of Zinc Sulphate on the growth and yield performance of tall and dwarf varieties of rice. ***Indian J. Agron***. **23** (4) : 375-376.

**Janki, C. and Singh, Vinay.** (2001) Interactive effect of soil salinity and nitrogen levels on yield and nutrient uptake in mustard. *Ann Pl. Soil Res*. **3** (1): 111-115.

**Khandelwal, R.B., Singh, Baldev. and Singh, Banani. (1990)** Effect of quality of irrigation water on soil properties, yield and nutrient composition of different gram genotypes .*J. Indian Soc. Soil Sci*, **38** (2): 358-60 .

**Kumar, V. and Verma, M. (1999)** Effect of phosphorus and sulphar application on yield, their content and uptake in wheat **var** H.D 2009 *Indian J. Agron*, **25**: 460-64.

**Ladha, J.K. D., Ventura, T.S., Singh, V., Ventura, W. and Watanaba, I. (2000)** long-term effect of urea and green manure on rice yields and Nitrogen balance. ***Soil science society of America journal* 64**, 1993-2001.

**Pal, B. and Tripathi, B.R**. (1978). Quality of irrigation and its effect on soil characteristics in semi-desert tract of Uttar Pradesh. A potential hazards of boron in irrigation water. *In**dian J. Agron*.192-95.**

**Patel, SL., Hanshal, C.S.,Vishwanath, D.P. and Chimmand, V.P.(1995**) Effect of use of saline water to supplement good water on the uptake of nutrient by green gram on black soil. *Indian j. Agric.Res.* (**5**):181-87.

**Reddy, D. and Yadav, B.R.(1994**)Zinc and phosphorus nutrient of wheat grown on a highly calcareous soil. *Ann. Arid. Zone*. **33**(3): 233-37.

**Sharma, Y.K. and Pal. B. (2001).** Effect of Nitrogen and Zinc application and Bronated saline sodic water on the herb yield, oil content and nutrient composition of Palmarasa (Cymbopogon Martine) ***Indian J. Agric. Sci.* 71** (2) : 102-105.

**Singadhune, R.B. and Rajpoot R.K. (1990).** Nitrogen use efficiency in rice under varing moisture regimes, sources and levels in semi reclaimed sodic soil. ***Indian J. Agron* 35** (1 & 2) : 73.81

**Singh, Omveer (1998**) Effect of salinity and nitrogen on yield and nutrient uptake in okra. *Indian J.Agron.* **43**: 333-37.

**Singh, Ashutosh. Verma., L.P., Shankar, Gauri. and Prasad, Kanti.** (20010) Effect of micronutrient on nutrients uptake and yield of transplanted rice .*Ann. Pl. Soil Res.* **3** (1): 140-42.

**Suresh, G. and Rao, J.V (2001**) Nitrogen of sorghum under nitrogen fixing tree species and nitrogen levels in semi-arid conditions. *Ann. Pl. Soil Res*. **3** (1): 33-36.

**Tripathi, B.R. and Pal, B. (1980)** the quality of irrigation water and its effects on soil characteristic and on the performance of wheat. *Int. Symp. Sal. Affected soils*, Karnal 376 – 81.