

## Response of CO 36 Rice Variety to N, P, and K levels Under Different Dates of Sowing

There is a linear trend of increase in yield of high yielding rice varieties for the increased dose of nitrogen to a certain extent and later the law of diminishing return begins to operate. When phosphorus fertilizers are applied to the soil they tend to increase the yield of grain and not straw. In many cases phosphorus application fails to show any response over the yield. It was found that progressive phosphate deficiency led to progressive reduction in height and tillering of paddy. The other major nutrient, potassium is generally less required on paddy soils, probably because such soils are usually of heavy texture and contain adequate quantities of this element.

When potassium is used in conjunction with N and P it generally increase yield. Besides, seasonal stress would also show differential response of yield. So to study the response of these three major nutrients viz., N, P and K under different dates of sowing in rice a trial was conducted at Agricultural College and Research Institute, Madurai during Kharif season 1974-75. The variety chosen was Co. 36, a high yielding, fertilizer responsive variety. The trial was laid out in 34 confounded design with four factors viz., date of sowing, N, P and K each at 3 levels.

The crop was sown on 16th June, 1st July and 16th July in 1974. The

TABLE Interaction between dates of sowing and nutrient levels (Mean yield of grain in kg/ha)

Nutrient levels		Dates of sowing				S. E.	C. D.
		16th June	1st July	16th July	Mean		
Nitrogen	N <sub>0</sub>	2232	3026	2406	2554	118.56	338.80
	N <sub>60</sub>	3176	3660	2722	3186		
	N <sub>120</sub>	4046	3958	3096	3700		
	Mean	3150	3548	2740			
Phosphorus	P <sub>0</sub>	3034	3594	2745	3126		
	P <sub>30</sub>	3510	3582	2638	3242		
	P <sub>60</sub>	2910	3468	2830	3068		
	Mean	3150	3548	2740			
Potash	K <sub>0</sub>	3296	3516	2936	3248		
	K <sub>30</sub>	2502	3452	2712	2888		
	K <sub>60</sub>	3656	3676	2574	3302		
	Mean	3150	3548	2740			
		S. E. = 202.54; C. D. = 578.81					



seedlings were planted 28 days after sowing. Three levels of N. viz., 0,60,120 kg/ha and three levels of P as  $P_2O_5$  and K as  $K_2O$  at 0,30,60 kg/ha were tried. While P and K were applied as basal nitrogen was applied in three split doses, half as basal, one fourth on 30th day after planting and the remaining one fourth on 45th day after planting. Adequate plant protection measures were taken and the yield data were statistically analysed.

From the results of the trial (Table ) it is seen that 1st July sowing was significantly superior to 16th June sowing and 16th July sowing treatments in grain yield. Among the nitrogen levels a rate of 120 kg/ha recorded significantly higher yield than 60 kg/ha.

Phosphorous and potash application did not record any significant increase in yield. Among the interactions, 1st July sowing along with  $K_2O$  at 60 kg/ha alone recorded significant increase in the yield of grain over the three levels of K applied to the crop sown on 16th July.

Hence it appeared that for obtaining maximum yield of Co 36, sowing on 1st July and application of N at 120 kg/ha P as  $P_2O_5$  at 30 kg/ha and K as  $K_2O$  at 60 kg/ha would be the most suitable recommendation for Madurai region.

V. GOPALAKRISHNAN  
B. GURURAJAN  
K. RAJAGOPALAN

Department of Agronomy,  
Agricultural College and  
Research Institute, Madurai.

Madras agric. J. 62 (9) : 583 — 585, September, 1975.

### Effect of Picloram on Root Cuttings of White Horsenettle (*Solanum elaeagnifolium* Cav.)

*Solanum elaeagnifolium*, perennial weed in Coimbatore District is well adopted for vegetative propagation through its creeping roots and offers resistance to mechanical control. A number of herbicides like picloram, mixture of picloram and 2, 4-D, salts of 2, 4-D, bromacil and SAN. H. 9789 have also been reported to be efficient (Kailasam et al., 1974) in controlling the above weed. Though scientists abroad have reported picloram to be an

outstanding herbicide (Tideman, 1965; Wiese, 1969 and Smith and Wiese 1970), under Coimbatore conditions permanent control of the weed has not been obtained since it failed to kill the root system (Kailasam et al., 1974). With this background, the present study was carried out at Tamil Nadu Agricultural University, Coimbatore during 1974 to study the optimum quantity of picloram required to kill the root cuttings of white horsenettle.