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.

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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.

In this study the treatments comprised of 3 lengths of root cuttings (10, 20 and 30 cm) of past season's growth with an uniform diameter of 3 mm collected with 30 cm depth, 3 concentrations of picloram solution (1, 5 and 10 ppm) for soaking the cuttings and four soaking periods (6, 12, 24 and 48 hours). These 36 treatment combinations were replicated twice. Each treatment consisted of four cuttings. The experiment was done in pot culture. Seventy two earthern pots (30 cm height and 30 cm diameter at the top) were filled with 10 kg of clay loam soil in each pot. The cuttings after treatment with picloram were planted 2.5 cm deep in pots at the rate of two cuttings per pot. The pots were regularly watered to field capacity with measured quantity of water. On the 180th day after planting, the cutting that were alive with new roots and aerial shoots were counted as established cuttings. The establishment percentage of root cuttings in each treatment was worked out. The cuttings were removed, dried in sun and oven and the dry matter production was estimated. The results were statistically analysed.

Effect of picloram on the establishment and dry matter production of white horse nettle root cuttings

Treatments	Number of cuttings	Mean establishment percentage (Arcsin trans.)	Mean dry matter produced (g/pot)
Concentration of picloram			
1 ppm	48	61.9	4.66
5 ppm	48	18.8	0.85
10 ppm	48	5.6	0.23
S. E.		4.9	0.29
C. D. (at 5%)		13.9	0.83
Period of soaking			
6 hours	36	45.0	2.79
12 hours	36	42.5	2.74
24 hours	36	17.5	1.30
48 hours	36	10.0	0.82
S. E.		5.6	0.34
C. D. (at 5%)		16.1	0.96
Length of root cuttings			
10 cm	48	26.3	1.75
20 cm	48	28.1	1.90
30 cm	48	31.9	2.10
S. E.		4.9	0.29
C. D. (at 5%)		N. S.	N. S.