

## A B S T R A C T

The text includes a general summary on the classification and uses of chemical weed control, and its application to tropical conditions. The compounds Pentachlorophenol, 2-4-Dichlorophenoxyacetic acid and Dinitro-butyl-phenol are more fully described and their properties discussed. Methods of experimental layout and technique used in herbicidal investigations are reviewed, together with experiments involving these three compounds on crops of a similar nature to those used in this preliminary investigation. It was recommended from the results of Pre-Emergence trials using P.c.P. and 2-4-D, that such experiments should be carried out initially under optimum growing conditions.

The two main experiments undertaken involved:-

i) A comparison of the effects of 2-4-D at 0.5 lbs./acre and D.N.B.P. at 1 lb./acre on the tropical legume Black-eyed Cow Pea (V. sinensis). The results showed that at all the three stages of growth under investigation the high toxicity of 2-4-D rendered its use quite impracticable. D.N.B.P. applied at the one- and three-week stages caused a significant reduction in yield, and there appears to be an optimum growth stage, between two and three weeks after emergence, at which no significant yield reduction occurs. The correlation between yield and percentage toxicity is also investigated. Included in this experiment was a fertiliser trial, but this produced no significant results.

ii) A comparative trial on the effect of D.N.B.P. at five concentrations from 0.25 - 1.50 lbs./acre, applied to Pole Beans (Phaseolus vulgaris, var. Kentucky Wonder) at the immediate pre-germinating growth stage. Despite the recommendations obtained from work under temperate conditions, none of these concentrations produced any significant decrease in eventual yield. Again no response to fertiliser levels was obtained.

As these experiments were of a preliminary nature, emphasis has been placed on recommendations for subsequent work on herbicidal evaluation.