

# REVIEW OF LITERATURE

## 1. INTRODUCTION

The use of chemicals for weed control is not a recent development; salt, ashes and various industrial by-products have been applied from early times to roadsides and pathways to rid them of vegetation and since 1900 many inorganic salts have been utilized as selective weed killers. In the 1930's formulations of dinitro-orthocresol were developed for the control of broad-leaf weeds in cereal crops, but until the post-war years spraying was done on a rather limited scale.

The major developments in weed control began as a result of the discovery of the selective killing action of 2-methyl-4-chlorophenoxyacetic acid (M.C.P.A.) by Slade, Templeton and Sexton (1945) and of 2, 4-dichlorophenoxyacetic acid (2,4-D) by Nutman, Thornton and Quastel (1945) together with the field trials carried out by Blackman (1945). Following this early work there has been a tremendous amount of research on selective and non-selective herbicides, and spraying for weed control has become a significant feature of routine farm management. According to Newman and Downing (1958), some 35 million acres of land in the U.S.A. are sprayed annually with herbicides, of which approximately 1 million acres of crops are sprayed with pre-emergence herbicides.

Crop yields are greatly depressed by weed competition. Ashby and Pfeiffer (1956) state that increase of the order of 100 per cent or more may result by proper weed control measures in many tropical crops, and Woodford (1952) reported that losses due to weeds in Great Britain, amounted to something in the region of £50 million per annum.

Crops are particularly susceptible to weed competition during the first few months after planting. If suitable herbicides can be found it should be possible to remove or reduce early weed competition by pre-planting or pre-emergence treatments. The recent discovery of weed killers with solubility in water capable of giving residual weed control for much longer periods than the chemicals previously used, is

perhaps as important as the discovery of the selectivity of 2,4-D and

M.C.P.A.