

**PLANT-GROWTH
REGULATORS
AS SELECTIVE HERBICIDES**

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PREFACE

Weed control has been a major problem in agriculture ever since man learned to distinguish the desirable from the undesirable products of the soil and to cultivate only the former. He soon discovered that for maximum production he had to prevent the undesirable plants (weeds) from competing with the desirable plants (crops) for the plant nutrients in the soil and for sunlight. By eradicating the weeds solely by hand or with the aid of simple implements, he was able to remove the source of competition. Thus was born the first method of weed control.

With the development of improved mechanical means of weed control and the use of chemicals, oils, and flame for eradicating weeds, the laborious job of hand weeding and the cost of weed control were materially reduced. It was later discovered that some of the chemicals and oils were selective in herbicidal activity, e.g., they were injurious to some species of plants only. Many of these chemicals, however, left in the soil deleterious residues which eventually made crop production impossible.

The latest advancement in weed control methods is the use of a group of synthetic organic compounds called plant-growth regulators. These compounds have three decided advantages over the other chemicals used for weed control: (1) they are more selective, (2) they require much lower concentrations for effective weed control, and (3) they do not leave toxic residues in the soil for any extended period.

Since the discovery of the herbicidal properties of plant-growth regulators in 1940, many investigators in England and in the United States have devoted much time and effort in research on this type of herbicide. The findings of these investigators are now appearing in many scientific and popular publications. This accelerated impetus is no doubt the result of the urgent need for increased food production which is seriously handicapped by the high cost and drastic shortage of farm labor.

The purpose of this paper is to present the historical development of the use of plant-growth regulators as selective herbicides. The author has attempted to present and summarize all available published reports known to him on this subject up to the time of the preparation of the manuscript.

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