CROP RESPONSE TO HORMONE SEED TREATMENTS

T. A. Kieselbach

Hormone dust treatments for the seed of farm crops are now recommended and offered for sale by their manufacturers. Various alleged benefits are quicker, stronger, and higher percentage germination; improved stands; stronger root systems; more rapid plant growth; superior resistance to adverse climatic factors; greater plant size; substantially increased yields of forage and grain; hastening of maturity; help in fighting drought, erosion, wind damage, and other plant enemies, actually providing drought insurance; all obtained at low cost per acre.

Early in 1942 the press called public attention to hormone seed treatment results obtained with various crops by J. C. Ireland of the Oklahoma Agricultural Experiment Station and interpreted by him as evidence of highly beneficial crop effects. Consequently it was considered advisable to investigate the possibilities of the hormone-seed treatment of farm crops in Nebraska, such tests being made in 1942 and herewith reported.

The crops under study were oats, barley, soybeans, and corn. The corn included an open-pollinated variety, first and second generations of hybrid U. S. 13, and an inbred line known as Ind. 38-11. The hormone seed treatments included five standard synthetic hormones commonly considered in such research and two commercial hormone dusts, all applied at several dosages.

The tests were conducted on the Agronomy Farm at Lincoln, Nebr., using standard crop production practices. The soil is tentatively classed as Marshall silty clay loam but has a heavier and more compact subsoil than is typical for that soil type. It has a pH of 5.7. The season was sufficiently drouthy to curtail distinctly the yield of the crops involved.

LITERATURE REVIEW

Published results concerning the effect of hormone seed treatments upon crop yields under field conditions are rather meagre.

McRostie, Hopkins, and Grace (6) report the 1938 winter wheat responses at the Ontario Agricultural College, Guelph, Canada, to various concentrations of indolyl acetic and naphthylacetic acids applied to the seed in the form of dusts. This was a triplicate paired-experiment of split-plot design, comparing directly treated and untreated seed of each of two varieties. Ten treatments and 10 varieties were involved, utilizing 60 nursery plots split lengthwise and measuring 183/4 feet by 10 rows wide. Whereas the average grain yield of all plots was 48.5 bushels...