

PCP was the only significant effect revealed by the weed control ratings. Mean crop tolerance ratings of 10.0 for all factors show the lack of any visible crop toxicity. In the case of yields, the only measurable difference was between varieties. In contrast to the 1957 results, in this experiment Lee slightly outyielded CNS-4. In line with the poorer weed control observed early during the growing season, the PCP treated plots yielded slightly fewer soybeans than did either the check plots or those treated by any of the other chemicals. These differences, however, were not statistically significant.

SUMMARY AND CONCLUSIONS

During the years 1956, 1957, and 1958, five screening trials were conducted on the organic soil at Zellwood to evaluate 25 different selective herbicides, applied pre-emergence for weed control in soybeans. Out of these trials, four chemicals were selected for more detailed studies in advanced replicated trials. These were CDAA, CDEC, EPTC, and PCP. All of these gave excellent weed control without crop injury at rates considered satisfactory for the development of a practical treatment.

The discarded chemicals were eliminated for reasons such as poor weed control, crop injury, too great variability in activity, or combinations of these factors. The chemical rates required to give adequate weed control on this organic soil often were found to be higher than would be economically convenient to use or practical. In others, the useful zone between the threshold chemical level just giving satisfactory weed control and the highest rate tolerated by the crop was too narrow to give any factor of safety to the grower.

The advanced herbicide evaluation program included two replicated yield trials. The first was conducted during 1957 using three rates of each of three herbicides and three varieties. CDAA was applied at 6, 9, and 12 pounds per acre; EPTC at 5, 10, and 15 pounds per acre; and PCP at 10, 15, and 20 pounds per acre. All treatments performed very well, giving excellent weed control without producing any significant injury to the crop. This was further corroborated by the yield data, which proved that none of the treatments injured the soybeans sufficiently to cause a reduction in the bushels of beans produced.

A similar trial in the summer of 1958 tested CDEC in addition to the chemicals used during 1957. Since the high rates