Several of the spray treatments gave satisfactory control of broadleaved weeds in each of the five experiments. The 2,4-D formulations gave better kills of wild lettuce than of horseweed, while the reverse was true of the two dinitro products. The ester of 2,4-D gave somewhat better weed kills than other 2,4-D formulations. Early applications of all chemicals gave better results than late applications.

The buffalograss seed yields in the five experiments are summarized in Table 1. The spray applications made May 4, 1945, when the grass was just beginning spring growth, increased the seed yield from 70 to more than 200%, with Sinox giving considerably greater yield than other chemicals. Spray treatments applied June 11, 1945, when buffalograss seed was forming, gave much less satisfactory results. Sinox increased the seed yield 80%, but the other chemicals decreased the yield or gave only a slight increase. Mowing June 11 increased the yield about 40% which was much less than from any of the spray applications made May 4.

Spray treatments applied April 24, 1946, when buffalograss was blooming produced unsatisfactory results in most cases. Sinox increased the grass seed yield about 20%, but none of the 2,4-D treatments produced increases. In fact, the heavier rates of 2,4-D reduced the seed yield 15 to 40%. Spray applications made May 22, 1946, after buffalograss seed was fully formed, also failed to increase the seed yield appreciably but greatly facilitated harvesting by removing the green weed growth.

Herbicidal sprays applied April 14, 1947, before buffalograss had started active growth, gave fair to excellent control of broadleaved weeds and increased grass seed yields 8 to about 60% with the heaviest rates of 2,4-D giving the largest yields. None of the 2,4-D formulations was superior to the others in this or any of the earlier experiments. Buffalograss seed yields in 1947 were abnormally low because of heavy infestations of little barley, Hordeum pusillum, and downy brome, Bromus tectorum, which were not controlled by the chemical treatments and tended to obscure the benefits of controlling the broadleaved weeds. Experiments are now under way in an attempt to discover a satisfactory chemical treatment for controlling these weedy grasses.