

spray date, increasing the rate of dicamba or 2,3,6-TBA, above 1 lb/A caused an increase in defoliation, but this effect was not always observed using picloram. (Cooperative investigations of Crops Research Division, Agricultural Research Service, U.S. Dept. of Agriculture, and New Mexico Agric. Expt. Sta., New Mexico State University, Las Cruces).

Herbicide evaluation studies for the control of tarbush (*Flourensia cernua*). Gould, W. L. and C. H. Herbel. Tarbush is a deciduous desert species which is found in dense stands on silty or clay loam sites on flood plains. The date of leaf emergence is dependent upon adequate soil moisture, so in some droughty years it may not leaf out until the summer rains occur.

The studies reported were carried out on the Jornada Experimental Range near Las Cruces, New Mexico from 1961 through 1965 to determine the best time for treatment and the best herbicides for selective control. Treatments were applied semi-monthly on 1/100 A plots using a simulated aerial application from July through October in 1961 and 1965. Treatments were initiated in August in 1962, on May 7, 1963, and on June 3, 1964. Defoliation estimates were made approximately two years after treatments were applied.

The 1961 treatments included 2,4-D, 2,4-DP, 2,4,5-T, silvex, 2,3,6-TBA and amitrole-T at 1/2 lb/A. Dicamba was added to the list of test materials in 1962, and picloram was added in 1963. Herbicides were applied on all spray dates at 1/2 lb/A in 1962, 1 lb/A in 1963, and at 1 1/2 lb/A in 1964 and 1965. Additional treatments with higher rates of herbicides were applied on one spray date in 1962, 1963 and 1964.

The degree of defoliation was quite variable between dates of application with the September treatments being most toxic generally. At rates up to 2 lb/A the phenoxy herbicides and amitrole-T usually gave less than 30 percent defoliation. Dicamba was the most toxic material, causing 70 percent defoliation on one or more spray dates each year. Increasing the rate of dicamba from 1/2 to 2 lb/A, increased the degree of defoliation only when treatment was not on the optimum date. At comparable rates of picloram and 2,3,6-TBA were much less effective than dicamba. (Cooperative investigations of Crops Research Division, Agricultural Research Service, U. S. Dept. of Agriculture, and New Mexico Agric. Expt. Sta., New Mexico State University, Las Cruces.)

Evaluation of aerial treatments for the control of creosotebush (*Larrea tridentata*). Gould, W. L. and C. H. Herbel. Creosotebush frequently occurs in almost pure stands in areas of the Southwest where it has invaded. Selective chemical control of creosotebush offers a means for natural revegetation where remnants of perennial grasses remain. This study was initiated to evaluate the response of creosotebush to aerial application of materials which had appeared promising in small plot tests.

The study was conducted near Truth or Consequences, New Mexico, using a fixed wing aircraft. The herbicides were applied to 12-acre plots in 5 gpa of spray material. Application was made each year during the first week of September. Plant kill was determined two years after treatments were applied by counting the number of living and dead plants occurring in groups of 100 plants at random locations within each plot.

In 1964 and 1965 the treatments included dicamba at 1/2, 1 and 2 lb/A, picloram and 1/2, 1 and 1 1/2 lb/A, and 2,3,6-TBA, silvex, 2,4-D, 2,4,5-T and 2,4-DP at 1 and/or 2 lb/A. Combination treatments in 1965 were 2,4-D and 2,4,5-T at 1 lb/A each, dicamba and 2,4,5-T at 1/2 lb/A each and picloram and 2,4,5-T at 1/2 lb/A each. In 1966 combinations of 2,4,5-T with dicamba at 1 lb/A each, and with 2,3,6-TBA at 1/2 and 1 lb/A each was applied.

Preliminary results of the 1964 and 1965 plots in 1966 indicated little control was being effected, so the 1966 treatments were applied over part of the 1965 plots, resulting in an area of each 1965 plot receiving a duplicate repeat treatment. The percent kill of creosotebush obtained from the various treatments are presented in the table. None of the phenoxy herbicides were effective either as single or repeated treatments. Approximately additive effects or better, resulted from the repeated applications of dicamba or 2,3,6-TBA, while there was not an increase in toxicity from picloram. Single combination treatments of 2,4,5-T with dicamba or picloram did not increase the kill over that obtained without 2,4,5-T, but a large increase in kill was obtained with a repeat treatment. (Cooperative investigations of Crops Research Division, Agricultural Research Service, U.S. Dept. of Agriculture, and New Mexico Agric. Expt. Sta., New Mexico State University, Las Cruces.)

Percent kill of creosotebush resulting from aerially applied herbicide treatments

Chemical	Rate lb/A	Year of Application			
		1964	1965	1966	1965+1966
Dicamba	1/2	0	12	4	15
Dicamba	1	1	25	25	54
Dicamba	2	5	34	51	62
Picloram	1/2	1	16	--	--
Picloram	1	5	25	15	17
Picloram	1 1/2	6	34	39	29
2,3,6-TBA	1	3	3	3	21
2,3,6-TBA	2	16	4	10	51
2,4,5-T	1	2	6	4	0
2,4,5-T	2	3	5	1	0
2,4-D	2	2	5	2	6
2,4-DP	2	3	--	--	--
Silvex	2	2	--	--	--
2,4-D + 2,4,5-T	1 + 1	1	4	1	3
2,4-D + 2,4,5-T	2 + 2	--	--	3	--
2,4,5-T + picloram	1/2 + 1/2	--	7	6	37
2,4,5-T + dicamba	1/2 + 1/2	--	7	7	33
2,4,5-T + dicamba	1 + 1	--	--	19	--
2,4,5-T + 2,3,6-TBA	1 + 1	--	--	13	--