CHEMICAL CONTROL

of Brush and Trees on Foothill Range

R. F. MILLER · V. H. SCHWEERS

Good forage production is seen at this Tulare test plot for chemical brush and tree control. Varying degrees of kill are visible on three trees to left with the one on the left considered 0–25% live; center tree, 25–50% live; and a dead tree with no foliage.

BLUE OAK on the woodland grass areas of Tulare County are frequently not killed by burning. Such treatments are effective in killing much of the non-sprouting brush, but sprouting species such as poison oak rapidly recover. There is always the danger that fires will escape onto other properties, including the National Forests and Parks. For these reasons, interest in methods of control in addition to fire have existed for many years in Tulare County.

The first attempts at chemical control by aircraft spraying with 2,4,5-T propionic acid or silvex were conducted in Tulare County on May 5, 1954. Results of this test were sufficiently promising to suggest that further tests should be conducted, especially regarding the influence of timing of applications and repeated applications. Such tests were subsequently conducted on similar vegetation in Amador County. Results of these tests were the first to show an appreciable percentage of the blue oak and poison oak actually killed by aircraft sprays. Since these tests were promising, additional applications were conducted, as reported here, in Tulare County to see if the results would hold for the same species in that county. An invert emulsion preparation of silvex also became available and was included in the test because of safety considerations with respect to spray drift.

Two 10-acre plots were sprayed on May 20, 1960 with two pounds of silvex per acre and were retreated in May 1961 with one pound of silvex and May 1962 with two pounds of silvex. One plot was sprayed with the invert emulsion, consisting of 3½ gallons of diesel oil plus six gallons of water, and the other plot with the regular emulsion of one gallon of diesel oil plus 8½ gallons of water. The plots were flagged at 33-foot intervals to help insure complete coverage.

Data on blue oak control were collected on August 27, 1963 and are presented in the accompanying table. The primary reason for including the invert preparation was to learn whether it would be at least as effective as the regular emulsion. The results seem to indicate that it was just as effective. There was a noticeable decrease in kill as the trees became larger in diameter. Although the actual kill was not complete, spraying had a pronounced influence on the canopy. The results of this test are suggestive of several other types of experimental approaches to the control of blue oak on such areas. Perhaps the larger trees could be controlled by the cut-surface method and the smaller trees when very numerous could be controlled by aircraft spraying with silvex.

Poison oak was killed to the ground and many of the plants completely killed. It is possible that the kills would have been slightly better had the sprays been applied one or two weeks earlier (about the same time as the 1954 application). All of the ceanothus and about one-half of the manzanita were killed by the sprays, while buckeye and live oak were severely damaged.

This is a progress report on the status of experimental work begun in 1954. While real progress is indicated from these results, there is a need for further experimentation. In future tests, silvex may be used alone or in combination with other chemicals and/or methods.

EFFECT OF TREE DIAMETER ON PERCENTAGE OF CONTROL OF BLUE OAK FROM ANNUAL APPLICATIONS OF SILVEX APPLIED AS A REGULAR EMULSION AND AS AN INVERT EMULSION

Degree of control (%)	Stem diameter							
	0 to 3 inches		3 to 6 inches		6 inches and over		All trees	
	Regular	Invert	Regular	Invert	Regular	Invert	Regular	Invert
Trees completely killed	63	89	65	78	50	33	60	75
Trees with basal sprouts	16	7	3	8	0	17	8	9
Trees partially killed								
(more than 50% of branches)	14	0	29	14	31	22	23	10
(less than 50% of branches)	7	4	3	0	19	28	9	6

R. F. Miller and V. H. Schweers are Farm Advisors, University of California Agricultural Extension Service, Visalia.