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LOCOWEED

Chemical Control on Kern County Rangeland



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CHEMICAL CONTROL ON KERN COUNTY RANGELAND

BY

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EVER SINCE CHEMICALS HAVE BEEN USED AS WEED KILLERS RANGE MEN HAVE WANTED AN HERBICIDE TO CONTROL LOCOWEED. THE EARLY ATTEMPTS AT CONTROLLING THIS WEED WITH CHEMICALS LOOKED RATHER DISCOURAGING. HOWEVER, INTENSIVE TESTING HAS REVEALED ONE HERBICIDE WHICH HAS CONSISTENTLY DONE AN EXCELLENT JOB OF KILLING LOCOWEED.

TEN WEED KILLERS, INCLUDING ONE SOIL STERILANT, WERE FIELD TESTED AT THREE LOCATIONS IN THE COUNTY. THE MATERIALS WERE TRIED AT DIFFERENT RATES AND DATES THROUGHOUT THE GROWING SEASON. ONLY ONE MATERIAL HAS GIVEN SATISFACTORY RESULTS IN ALL OF THE TESTS.

2, 4, 5 - T

2,4,5-T LOW VOLATILE ESTER AT 2 QUARTS (2 LBS. ACID EQUIVALENT) PER ACRE HAS DONE AN EXCELLENT JOB IN ALL LOCATIONS AND OVER WIDE VARIATIONS IN STAGE OF GROWTH AND ENVIRONMENTAL CONDITIONS. IN FIELD TESTS WHERE GROWING CONDITIONS WERE IDEAL AND STAGE OF GROWTH JUST RIGHT, THE ONE QUART PER ACRE RATE OF 2,4,5-T WAS AS EFFECTIVE AS THE TWO QUART RATE. HOWEVER, WITH LESS IDEAL CONDITIONS OF SOIL MOISTURE, STAGE OF GROWTH, ETC. ONE QUART MAY GIVE A 75% OR 80% KILL, WHILE THE TWO QUART RATE WILL GIVE A COMPLETE KILL OF THE EXISTING LOCOWEED.

STAGE OF GROWTH

THE TWO QUART PER ACRE RATE HAS BEEN EFFECTIVE THROUGHOUT THE BLOOMING PERIOD. BEST RESULTS HAVE BEEN DURING EARLY BLOOM TO MID-BLOOM. OCCASIONAL SEED PODS MAY BE PRESENT ON THE MID-BLOOMING PLANTS.

SUCCESSFUL TREATMENTS HAVE BEEN MADE BY SPRAYING AS EARLY AS MID-JANUARY DURING AN EARLY SEASON ON THE FLOOR OF THE VALLEY AND AS LATE AS LATE-MAY AT MOUNTAIN ELEVATIONS OF APPROXIMATELY 5,000 FEET. THESE WERE THE EXTREMES OF SUCCESS, HOWEVER, WITH FEBRUARY AND MARCH USUALLY BEING BEST FOR LOW ELEVATION RANGES AND MARCH AND APRIL BEST FOR HIGH ELEVATION. HOWEVER, AS THE SEASONAL GROWTH VARIES SO MUCH FROM YEAR TO YEAR, THE STAGE OF GROWTH IS THE BETTER FACTOR TO USE IN DECIDING THE CORRECT TIME TO SPRAY.

SPRAY VOLUME PER ACRE

THE VOLUME OF WATER SEEMED TO HAVE NO EFFECT WITHIN THE LIMITS OF THESE FIELD TESTS. VOLUMES OF 100 GALLONS, 200 GALLONS, AND 300 GALLONS PER ACRE WERE TRIED. THE KILL OF LOCOWEED VARIED ONLY WITH THE AMOUNT OF 2,4,5-T USED PER ACRE AND THE EVENNESS, OR THOROUGHNESS, OF COVERAGE OR SPRAY PATTERN.

EFFECT OF 2,4,5-T ON OTHER PLANTS

2,4,5-T DID NOT APPEAR TO REDUCE THE TOTAL AMOUNT OF FEED, BUT IT DID CHANGE THE COMPOSITION. THE RED STEM FILAREE WAS SEVERELY DAMAGED, AND IN MANY CASES, COMPLETELY KILLED FOR THE SEASON THE SPRAY WAS APPLIED. THE GRASSES, MAINLY RED BROME AND ANNUAL FESCUES, FILL IN TO REPLACE THE FILAREE.

THE SECOND YEAR THE FILAREE WAS BACK IN A NORMAL STAND.

OTHER HERBICIDES AND THEIR RESULTS

SINCE IT IS OFTEN IMPORTANT TO KNOW WHAT AN HERBICIDE WILL NOT DO, THE OTHER WEED KILLERS TESTED WILL BE GROUPED AND BRIEFLY DISCUSSED.

BRUSHKILLERS - THREE 2,4-D AND 2,4,5-T BRUSH-KILLER COMBINATIONS WERE TRIED. THESE MATERIALS REACTED QUITE SIMILARLY AND WHILE THEY DID SOME GOOD, THEY WERE NEVER AS EFFECTIVE AS 2,4,5-T ALONE. THE 2 QUART PER ACRE RATE OF THE COMBINATION BRUSHKILLERS GAVE A 50% TO 80% KILL OF LOCO. IN COMPARISON, THE STRAIGHT 2,4,5-T GAVE A 99% TO 100% KILL. THE FILAREE AND GRASSES REACTED THE SAME WITH BRUSHKILLERS AS WITH 2,4,5-T.

2,4-D - BOTH AMINE AND LOW-VOLATILE ESTER FORMS OF 2,4-D WERE QUITE INEFFECTIVE FOR LOCOWEED CONTROL. BOTH MATERIALS PRODUCED SOME CURLING OF THE PLANTS AND DELAYED BLOSSOMING. HOWEVER, NORMAL GROWTH WAS RESUMED AND COMPLETE RECOVERY WAS MADE BY THE END OF THE GROWING SEASON. THE 2,4-D WAS ALSO SEVERE ON FILAREE, BUT, AGAIN, THE GRASSES FILLED IN TO REPLACE IT.

AMINO TRIAZOLE - CALLED ATA, LOOKED QUITE PROMISING SOON AFTER SPRAY APPLICATION, BUT THE EFFECT ON LOCO WAS NOT LASTING, EXCEPT FOR THE HEAVIEST RATE OF APPLICATION. ATA WAS NOT ONLY INEFFECTIVE IN KILLING LOCO, BUT IT WAS VERY DAMAGING TO FILAREE AND THE ANNUAL RESIDENT GRASSES. A RESIDUAL REMAINED TO DAMAGE FILAREE AND ANNUAL GRASS INTO THE SECOND GROWING SEASON.

RATES OF 2 AND 4 POUNDS OF THE COMMERCIAL MATERIAL (1 AND 2 POUNDS ACTIVE INGREDIENT) PER ACRE GAVE POOR RESULTS ON LOCO. THE 8 POUND (4 POUNDS ACTIVE) PER ACRE RATE GAVE 40% TO 75% KILL OF LOCO AND SEVERE DAMAGE TO ANNUAL FEED PLANTS. ONE TEST OF 12 POUNDS (6 POUNDS ACTIVE) GAVE GOOD CONTROL OF LOCOWEED BUT VERY SEVERE DAMAGE TO NATIVE RANGE GRASS AND FILAREE.

DALAPON - DALAPON WAS FIELD TESTED AT 5, 10, AND 20 POUNDS PER ACRE. THERE WERE ONLY SLIGHT DIFFERENCES BETWEEN RATES. DALAPON WAS INEFFECTIVE ON THE LOCO, AND VERY SEVERE ON THE ANNUAL GRASSES AND FILAREE. EVEN IN THE THIRD GROWING SEASON AFTER THE 20 POUND RATE WAS APPLIED THERE WAS NO MORE THAN A 5% GROUND COVER OF FILAREE AND ANNUAL GRASS. THE LOCO WAS ACTUALLY INCREASED IN THIS PLOT WITH THE REDUCTION IN PLANT COMPETITION.

FENURON - THIS SOIL STERILANT WAS APPLIED AT RATES OF 1, 2-1/2, 5, 10, 20, 30 AND 40 POUNDS PER ACRE. IN THIS LOW RAINFALL AREA IT SEEMS DESIRABLE TO MAKE THE APPLICATION AS EARLY AS POSSIBLE IN THE RAINY SEASON. FIELD TESTS AT TWO LOCATIONS WERE QUITE EFFECTIVE WHEN 10, 20 AND 40 POUNDS PER ACRE RATES WERE APPLIED IN JANUARY. RATES BELOW 10 POUNDS WERE NOT EFFECTIVE WHEN APPLIED IN FEBRUARY. THE 10 POUND RATE GAVE A COMPLETE KILL WHEN APPLIED IN JANUARY BUT WAS ONLY PARTIALLY EFFECTIVE WHEN APPLIED IN FEBRUARY.

FENURON AT 10 POUNDS PER ACRE OR MORE, APPLIED EARLY IN THE GROWING SEASON, CAN BE USED EFFECTIVELY TO KILL LOCO, BUT IT KILLS ALL PLANT GROWTH FOR TWO TO FOUR YEARS AT THESE RATES. IT COULD BE USED IN AN AREA WHERE THE USE OF A HORMONE-TYPE WEED KILLER, SUCH AS 2,4,5-T IS NOT PERMITTED.

SUMMARY

- 2,4,5-T LOW VOLATILE ESTER AT THE RATE OF 2 QUARTS (2 LBS. ACID EQUIVALENT) PER ACRE CAN BE MIXED WITH WATER TO MAKE A SPRAY TO SUCCESSFULLY KILL LOGOWEED ON RANGELANDS.
- THE VOLUME OF WATER SHOULD BE SUFFICIENT TO GIVE THOROUGH AND UNIFORM COVERAGE-- OTHERWISE GALLONAGE IS NOT IMPORTANT WITH- IN THE 100 GALLON TO 300 GALLON PER ACRE RATES USED IN THESE FIELD TESTS.
- 2,4,5-T AT THIS RATE WILL SEVERELY DAMAGE FILAREE BUT WILL NOT HARM THE GRASSES.
- THE APPLICATION SHOULD BE MADE WHEN THE LOCO IS IN THE EARLY BLOOM TO MID-BLOOM STAGE OF GROWTH.
- AMINO TRIAZOLE AND DALAPON HARM FILAREE AND GRASSES MUCH MORE THAN THEY DO LOCO.
- FENURON, A SOIL STERILANT, CAN BE USED TO KILL ALL PLANT GROWTH IN AN AREA WHERE THE USE OF 2,4,5-T IS NOT PERMITTED.
- ANNUAL LUPINE WAS KILLED BY ALL OF THE HERBICIDES TESTED.
- THE 2,4,5-T TREATMENT WILL NOT PREVENT THE DEVELOPMENT OF NEW SEEDLINGS IN SUCCEEDING YEARS. ONLY LOCO PLANTS ACTUALLY SPRAYED WITH THE 2,4,5-T ARE KILLED.
- THREE DIFFERENT BRANDS OF 2,4,5-T WERE FIELD TESTED WITH NO DIFFERENCE IN EFFECTIVENESS AMONG THE THREE MATERIALS.

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