Sierra Cascade Intensive Forest Management Research Cooperative Proposal 10-01
Milestone VM

Principal Investigator: Ed Fredrickson

Title: Aminopyralid Site Preparation and Conifer Tolerance

Year Approved: 2010

Executive Summary:

Milestone VM (aminopyralid) is a relatively new product in California. It was registered for use in 2008 for non-crop sites. Currently Dow AgroScience is compiling data in the hope of obtaining a forestry label. Milestone VM is a pre and post emergent herbicide that controls a wide variety of broadleaf weeds (including legumes) and brush. It is an auxin and has both foliar and soil activity. The residual control is proving to be quite good and the product is an excellent inhibitor of seed germination. It is also showing some unique properties for brush control when tank mixed with other products. It has very low use rates, with maximum label rates at seven ounces per acre (0.1 lb ae/ac).

Previous testing has indicated no conifer tolerance for "over the top" applications, but directed applications around trees appears to be feasible. There is also a strong potential to broaden the spectrum of control when tank mixed with Velpar DF. The major questions surrounding Milestone VM and forestry at this point are regarding conifer tolerance as a site preparation spray and the duration of control by season. Milestone VM might have a fit as a site preparation treatment for some of the chemically intolerant conifers such as sugar pine, cedar, and redwood, although testing has yet to be done.

The stated objective of this study is to evaluate the effect of aminopyralid rate and timing on vegetation control and conifer tolerance of ponderosa pine and Douglas-fir when applied as a pre-plant site preparation treatment with Milestone VM alone and in combination with Velpar DF compared to Velpar DF as the operational standard.

The study will have two sites, one east side Cascade site and a low elevation west side Cascade site. Each site should be a fresh clear-cut or wildfire that has not had any chemical treatment prior to the trials. The plan will be to spray the east side site in the fall of 2010 and the low elevation site in the spring of 2011. Both sites will be planted in the spring of 2011. The study design will be a completely randomized block design with four replications. Stock type and seed lot will be the same for all trees of each species in the study. The stock type will be similar to what is operationally planted on the site.

Treatments to be studied include: Milestone VM alone at 0.0625, 0.11, and 0.22 lbs. a.i./acre; Milestone VM at 0.11 lbs. a.i./acre plus Velpar DF at 1.0 a.i./acre, and Velpar DF alone at 2.5 lbs. a.i./acre. All

applications will be applied at 10 gallons per acre at 30 psi. Base line data for conifer height and caliper will be taken at time of planting. End of season evaluations will take place at the end of the first and second growing seasons after treatment and will consist of ocular estimates of vegetation percent cover by species for the weeds and brush, ocular rating of conifer damage, and measurement of conifer seedling height and caliper.

2010: The fall site is located on property owned and managed by Sierra Pacific Industries approximately 10 miles west of Dana, California. Elevation is approximately 4000 feet. Slope is between 0 and 10 percent. The site is a sub-soiled clear-cut that was planted three years ago and has never received any herbicide treatment. As a result, the site is dominated by herbaceous vegetation with relatively poor stocking. Study plots were established in areas with no conifer stocking. Plot size is 12 feet by 36.3 feet (0.01 acre).

The study site was sprayed on October 6, 2010. All treatments were applied with a 12 foot backpack boom sprayer and all plots were sprayed with one timed pass.

Each plot will be planted with 10 ponderosa pine and 10 Douglas-fir seedlings in the spring of 2011. A spring location for the second replication of this study will be installed on Sierra Pacific Industries land in the Sacramento Canyon near Sweetbriar. Plots will be installed and sprayed in February 2011 and planted and measured soon after.