



Florida Department of Transportation Research

Roadside Vegetation Field Condition Study

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Roadside perennial grasses stabilize soils, reduce erosion, and assist to maintain the integrity of roadway right-of-ways and roadbeds. One way to maintain healthy roadside grasses is to control weed growth. Technicians with FDOT's maintenance office measure the quality of right-of-way vegetation using the Maintenance Rating Program (MRP) rating scale.

Researchers at the University of Florida's Institute of Food and Agricultural Services (IFAS) recommend using herbicides to manage weeds and to promote turf growth. However, the level of improvement of turf growth resulting from herbicide application has not been documented. Recently, IFAS researchers studied an area in Alachua County and another in Hardee County to measure the effect of herbicide application on weed control and turf health. Both areas had scored poorly on the MRP rating scale. The counties, located in different plant hardiness climate zones, contain different soil conditions and a variety of weed species. Therefore, the study also would help researchers determine whether a herbicide program implemented in one part of the state would be equally effective in another.

IFAS researchers applied aminopyralid and tri-clopyr amine to three nearby plots in Alachua County on July 30, 2010, and three in Hardee County on September 20, 2010. The plots measured 20-feet wide by 100-feet long. A 20x50-foot non-treated plot separated each treated plot. Researchers again sprayed each plot in Alachua County on April 15, 2011, and in Hardee County on May 9, 2011, with the same herbicide quantity.

In Alachua County, researchers found that before treatment the test plots included 30 percent Bahia grass and 10 percent Bermuda grass, both desirable perennial grasses, in the areas where turf grass was present. The dominant weeds included Spanish needles, match weed, and dog fennel. After the first treatment, weed cover was reduced to zero. The residual activity of aminopyralid

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Roadside vegetation in Hardee County after treatment.

prevented the germination and re-establishment of weeds throughout the growing season. In spring 2011, herbicide concentrations in the soil had dissipated and weeds reemerged. On April 15, 2011, researchers reapplied the herbicide and found that the second treatment controlled 100 percent of existing weeds and resulted in the site being weed free through October 2011. Researchers observed that by September 2011, desirable perennial grasses covered approximately 70 percent of the area previously infested with weeds.

In Hardee County, researchers found that Bahia grass covered 60-70 percent of the areas where turf grass was present in the test plots and Spanish needles covered approximately 95 percent. After the September 20, 2010 application, weed cover fell to less than five percent. The April 2011 treatment controlled the winter weed growth. To date, Bahia grass has increased to 70-80 percent of the total site in the treated areas.

Turf growth in both locations now meets MRP standards. Researchers concluded that it is likely that repeat applications occurring annually for two- to four-years would improve turf quality and reduce weed growth so that yearly herbicide applications would no longer be necessary.