

Overall plot view from the May 2010 trial of mesotrione treatments 16 days after the beginning of treatments.



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halted the mesotrione activity.

The last trial we conducted in October 2010 gave completely different results. Treatments that had a long interval between successive applications provided the best control. For example, applying 0.17 lbs. a.i./acre every two weeks for three applications resulted in an average of 10 percent annual bluegrass control in the three trials conducted in the spring and summer of 2010 but 100 percent control in the October trial.

How can this be explained? My hypothesis is, as temperatures cool off in the late fall, the metabolism of mesotrione by annual bluegrass slows substantially, keeping a higher level of mesotrione in the plant for a longer period of time (i.e., the half-life of mesotrione in annual bluegrass increases from one to two days in the summer to seven to 10 days in the late fall). The increase in mesotrione half-life resulted in sound control from an application regime that would be completely ineffective during the spring or summer.

Treatment duration

Another observation from these trials is that annual bluegrass must be bleached for a substantial number of days before control is achieved. As can be seen in the photo above, almost every plot in the picture, from the May 2010 trial, is showing substantial

bleaching at 16 days after the first application. Yet, all treatments in this trial provided poor control, with only two treatments providing significantly better control than the untreated plots (See Table 1). The two treatments that resulted in marginal control used light, frequent applications that, from the first treatment to the last, took 21 or 31 days.

Only when the temperatures were hot — the July trials — did treatment durations of less than 14 days provide reasonable annual bluegrass control (See Table 1). For example, applying 0.1 lbs. a.i./acre five times on a Monday-Wednesday-Friday application schedule provided an average of 91 percent annual bluegrass control in the two trials conducted in July of 2009 and 2010. Average control from this treatment regime was only 28 percent in the other four trials conducted in cooler temperatures. This treatment regime took nine days from the first application to the last.

Summary and future work

We've shown Tenacity can be used to control annual bluegrass at almost any time of year when using the proper application strategy. During the warmer months (June through September), frequent, low-rate applications provide the best results. Applying 0.05 lbs. a.i./acre (1.6 fl. oz. product/acre) three times per week totaling 10 applications provided consis-

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