

## **BASAMID + EPTAM: REPLACEMENT FOR METHYL BROMIDE IN WARM-SEASON SOD PRODUCTION**

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Experiments were initiated spring 2006 at Tallassee and Fairhope, Alabama as part of a CSREES funded methyl bromide transition grants research. Results from this research showed that Basamid (metam sodium) at 448 kg ai/ha was a replacement for Methyl Bromide (MB) but lack of control of annual weeds required substantially more selective herbicide input compared to MB 98/2 at 448 kg/ha. In 2007, Eptam 7 EC (EPTC) at 7.84 kg ai/ha + Basamid at 448 kg ai/ha was included as an additional treatment in 2007. Results from this study showed this treatment was equivalent to MB for both weed control and centipede grass sod production. This led to the objectives of research initiated in 2008: 1) determine level of control of common bermudagrass [*Cynodon dactylon* (L). Pers.] with Eptam and/or Basamid; 2) determine optimum rate of Basamid to combined with Eptam at 7 lb ai/A; 3) determine optimum plant-back interval for warm-season turf species.

**Tallassee, AL:** An area with heavy infestation of common bermudagrass was prepared spring 2008 by chisel plowing, disking and smoothing. The objective was to create a worse-case scenario for potential bermudagrass infestation. Eptam at 7.84 kg ai/ha was sprayed onto the soil surface 23 April, 2008 and immediately incorporated into the soil with a vertical-action tiller. Basamid was then applied with a granular spreader at rates of 0, 112, 224, 336 and 448 kg ai/ha either alone or over the Eptam. Following application, Basamid was incorporated into the soil with a vertical-action tiller. The soil surface was firmed using a drum roller and irrigation was applied to further seal the soil surface. Bermudagrass growing point counts and visual estimates of control were made periodically over the growing season. Results 104 days after application showed Eptam alone averaged 78 bermudagrass growing points per 20 square meters. Combining Eptam with 112, 224, 336, or 448 kg ai/ha Basamid resulted in 121, 96, 47, and 26 bermudagrass growing points per 20 square meters, respectively. Statistically, no rate of Basamid was required with the Eptam for common bermudagrass control. Without Eptam, all Basamid-treated plots provided unacceptable control which averaged 75 to 100% common bermudagrass ground cover at 104 days.

**Auburn, AL:** An experiment with treatments identical to those at Tallassee was initiated 30 July, 2008. St. Augustine grass [*Stenotaphrum secundatum* (Walter) Kuntze] and zoysiagrass (*Zoysia japonica* x *tenuifolia*) rooted sprigs (1.27cm

diameter cone containers) were transplanted 1, 3, and 5 weeks after chemical treatment. Actual dates were 7 August, 18 August and 3 September. Visual estimates of injury were recorded over the growing season. Results showed zoysiagrass and St. Augustinegrass responded similarly to all treatments. Injury for the first plant-back date, 7 August, ranged from 40% for Eptam alone to 12% for Eptam + Basamid at 112 kg ai/ha for zoysiagrass and 38 and 15% for St. Augustinegrass. Combinations with higher rates of Basamid showed injury levels similar to Eptam alone. Injury for the second plant-back date (18 August) was less than 30% (upper end of slight injury) for all treatments and both turf species.

**Milton, FL:** A study with treatments identical to those above was initiated at this location. Tifway hybrid bermudagrass was harvested and soil prepared for experiment initiation. Eptam and Basamid were applied on 15 July, 2008. Centipedegrass was planted on 15 August, 2008. Weed control was visually evaluated on 28 August, 2008. Eptam alone provided 98% bermudagrass control, 85% purple nutsedge control and 85% southern crabgrass control. The combination of Eptam plus Basamid at 112 kg ai/ha provided 100% control of all weeds present. Eptam caused slightly delayed emergence of the centipedegrass.

**Conclusion:** The Eptam + Basamid treatment is an excellent replacement for MB in warm-season sod production. Eptam alone showed good efficacy against common and hybrid bermudagrass but Basamid alone did not. Basamid at 112 to 224 kg ai/ha combined with Eptam at 7.84 kg ai/ha should provide broad-spectrum pest efficacy and affordability. Glyphosate applied preplant prior to Basamid + Eptam enhanced efficacy against perennial grass species at minimum cost in the 2007 experiment. Plant-back interval of 3 to 5 weeks should insure safety to seeded centipedegrass (confirmed in 2007) and vegetatively-planted species such as zoysiagrass and St. Augustinegrass. The key to longevity of this treatment will depend heavily on solving the enhanced biological degradation problem of this carbamate chemistry. Research is currently underway to address this problem.