EFFECT OF MULCH TYPE ON METAM POTASSIUM EFFICACY, ALONE AND IN COMBINATIONS

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Introduction: Metam sodium (VAPAM®) and metam potassium (K-PAM®) programs with other fumigant combination partners, particularly chloropicrin, have shown promising results in Florida and the southeastern United States when used as methyl bromide/chloropicrin alternatives.

Recent developments in plastic mulch technology have resulted in the need to evaluate the effectiveness of these various mulches with metam, as well as the combination partners in methyl bromide/chloropicrin alternative programs.

Methods: Field experiments were conducted in west central Florida from 2004 through 2006 to evaluate the effect of mulch film type on nutsedge control with metam potassium, chloropicrin and 1,3-D + chloropicrin. In addition, chloropicrin and 1,3-D + chloropicrin were evaluated in combination with metam potassium. Chloropicrin (150 lb/treated acre) was applied through 3 gas knives per bed using industry standard equipment for tomato production. Metam potassium (60 gal/treated acre) and 1,3-D + chloropicrin (26 gal/treated acre) were delivered to the raised , mulched beds through drip irrigation with 2 drip tubes (0.45gpm/100 ft, 12 inch emitter spacing) spaced 8 inches on each side of the bed center. Delivery water volume was 1 acre inch in each study. Nutsedge plants which had emerged through the mulch film were counted multiple times during the season. Staked tomatoes were grown using subsurface irrigation and yield data were collected.

Results: In most experiments, use of VIF improved the performance of all fumigants and the combination treatments were the most effective for nutsedge control. This research is continuing to better define these responses and to further elucidate the role of application timing of metam in relation to chloropicrin and 1,3-D + chloropicrin.