

METHYL BROMIDE ALTERNATIVES (MBA) PROGRAM

Metam Sodium Alone and Combination Treatments Show Good Results in Florida IR-4 Trials

Metam sodium used alone and in combination with chloropicrin or Telone II, was evaluated in four IR-4 trials in Florida in the fall of 2001 and spring of 2002. Two trials each of tomato and strawberry were conducted by Dr. Jim Gilreath. Metam sodium alone and the combination treatments provided statistically equivalent yields as compared to the methyl bromide/chloropicrin standard in each of the four trials.

The application flexibility of metam sodium allows for it to be used in many ways. The following application methods were evaluated in these trials:

- Metam sodium was applied at 75 gpa through three drip tubes per bed. The total water applied was 2.5 acre-inches.
- Metam sodium was applied broadcast with a rototiller at a rate of 75 gpa. This treated soil was then pulled into a false bed and chloropicrin was injected into the bed at 150 lbs/ac with 3 chisels per bed.
- Metam sodium was applied broadcast with a rototiller at a rate of 75 gpa. This treated soil was then pulled into a false bed and Telone II was injected into the bed at 12 gpa with 3 chisels per bed.
- Chloropicrin was injected at 300 lbs/ac by 3 chisels per bed. Metam sodium was then applied at a rate of 37.5 gpa as a bedtop spray.
- All treatments were covered with plastic mulch.

Matching the method of application with the targeted pest is a key element in the successful use of metam sodium in Florida. The chemical properties of metam sodium do not allow it to move as readily in the soil as methyl bromide. For this reason, the application must place the product close to the targeted pest organisms. Most research trials and commercial evaluations with metam sodium in Florida have centered on fairly shallow application in the upper 6 - 8 inches of the finished bed, primarily for annual weed, nutsedge and disease control. Although the data are not presented, these treatments resulted in control of nutsedge, evening primrose, stubby root nematode, sting nematode, fusarium wilt and fusarium crown rot at similar levels com-

pared to what was obtained from the 350 lbs/ac of the methyl bromide/chloropicrin (67:33) standard treatment.

Based on research in several field programs conducted by the Metam Sodium Task Force, Amvac Chemical Corporation and IR-4, some basic aspects that could be considered a "checklist" for improving the consistency of performance from metam sodium products are as follows:

- Always pre-irrigate a minimum of 5 days before fumigation to activate pests in the soil.
- Be sure that soil is well worked. Clods and excessive crop residue will harbor pests and/or allow for the methyl isothiocyanate (MITC) to escape.
- Soil moisture should be at 50 to 80% of field capacity at the time of treatment.
- Method of application should result in placement of metam sodium close to the target organism(s) in the soil. Use combination treatments if necessary.
- Apply a soil seal as quickly as possible to keep MITC in the soil long enough to be effective. Plastic mulch or water seal is preferred in Florida.
- Always read and follow label directions.

As the attached table indicates, metam sodium alone and combination treatments provided yields of 95 to 119% of the methyl bromide/chloropicrin standard in 8 of 12 comparisons. Three of the comparisons yielding 91% or less of the methyl bromide/chloropicrin treatment were in one of the four trials. In this particular trial, there was much variability of pest pressure and a light incidence of disease (Fusarium crown rot). The untreated check yielded 84% of the methyl bromide/chloropicrin standard.

Increased emphasis on proper application and placement of metam sodium has resulted in much improved consistency of performance in Florida soils and this is improving each year as we gain a better understanding of the optimal application conditions and procedures for metam sodium products. Metam sodium is proving to be a valuable component of a methyl bromide alternative program in Florida.

Continued on Page 12

Metam Sodium Alone and Combination Treatments Show Good Results in Florida IR-4 Trials

Continued from Page 11

Metam Sodium Alone and Metam Sodium Combination Treatments in Florida IR-4 Methyl Bromide Alternatives Trials

Product and Method of Application:	Tomatoes Fall 2001 Bradenton, FL	Tomatoes Spring, 2002 Immokalee, FL	Strawberries Fall 2001 Bradenton, FL	Strawberries Fall 2001 Dover, FL
Untreated	43%*e	84% a	46% e	29%e
MeBr/Pic (67:33) at 350 lbs/ac	100% abc	100% a	100% abc	100% abc
Metam sodium at 75 GPA - 3 drip tubes	109%a	79% a	95% abcd	85% abcd
Metam sodium at 75 gpa w/rototiller fb chloropicrin at 150 lbs/ac chisel in-bed	100% abc	91% a	97% abc	98% abc
Metam sodium at 75 gpa w/rototiller fb Telone II at 12 gpa chisel in-bed	96% abc	71% a	NA	NA
Chloropicrin at 300 lb/ac chisel in-bed + Metam sodium at 37.5 gpa-bedtop spray	NA	NA	119% a	111% ab

*% = yield compared to MeBr/Pic standard

IR-4 Trials conducted by Dr. Jim Gilreath, University of Florida, Bradenton, FL
 Trials sponsored by the Metam Sodium Task Force and AMVAC Chemical Corporation
 The metam sodium used in these trials was VAPAM®HL, donated by AMVAC.

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News from Canada

Agriculture and Agri-Food Canada has boldly undertaken their data generation role in 2003 toward minor use pesticide registration in Canada. They have agreed to conduct trials on 23 joint IR-4 projects and an additional 74 others for Canada only. There will be a total of 291 food residue trials, 287 crop tolerance trials (Canadian data requirement), and 141 efficacy trials. These will be done at AAFC research centers, and by private research companies. The 2003 season will go down as a landmark for Canadian Minor Use.

Article by Craig Hunter