

Pesticide Information Request Response
Arid Southwest IPM Network
Arizona Response to Fumigant Information Request
April 5, 2007

Active Ingredients:

Chloropicrin, dazomet, metam potassium, metam sodium, and methyl bromide

Crops/Target sites:

List 1. Crops for which EPA anticipates assessing the impacts of risk mitigation.

Cantaloupes	Peppers
Carrots	Potatoes
Cucumbers	Squash
Eggplant	Strawberries
Forest Seedlings	Sweet Potato
Nursery Crops ¹	Tobacco
Onions	Tomatoes
Orchard Replant, California ²	Watermelons
Peanuts	

List 2. Crops for which EPA does not plan to assess the impacts of risk mitigation.

Artichoke	Figs
Broccoli	Green Beans
Brussels Sprouts	Lettuce
Cauliflower	Pecan
Celery	Pome Fruit
Chicory	Spinach
Citrus	Sugar Beets
Corn	Sweet Corn
Cotton	Wheat

Extent of Response / Data Sources:

Responses represented here are provided by the Arizona Pest Management Center, are *limited to Arizona*, and are primarily based on the Pesticide Use Reporting (PUR) database, which provided data for actual product use from 2001 to 2005. The state requires all the listed active ingredients included in this request to be reported by applicators, so we have high confidence that these data represent all uses of these ingredients for the 5-year period. In addition, information was provided by University of Arizona research scientists John Palumbo and Mary Olsen, Scott Tollefson of Del Monte Fresh Produce based in Yuma, Arizona, and by Independent Pest Control Advisor Lin Evans.

Data were requested but not received from other Arid Southwest IPM Network (ASIPMN) partner states, including New Mexico and Nevada.

Comments on Product Use:

The only active ingredient listed for which there is significant use in Arizona is metam sodium (Vapam) and to a lesser extent chloropicrin (Tri-Clor). The primary crops or areas of use indicated for these fumigants are melons (cantaloupes, honeydews, watermelons) in Yuma, LaPaz and Maricopa Counties, and fallow land applications in Yuma County. In addition, we have a limited number of applications of metam sodium to spinach.

Comments on Crop Lists:

Based on pesticide use data (2000-2005) *we concur with the placement of cantaloupes on the risk mitigation list (List 1). We would add that this should be expanded to include honeydews and other specialty melons.* The use of Vapam is critically important to melon production in central and southwestern Arizona, with over 430 applications documented over this time period. It is usually applied through sub-surface irrigation as a post-harvest fumigation treatment that quickly kills the remaining crop plants. This is currently the only effective and economically viable treatment for *Monosporascus* vine decline, which is caused by the fungus *Monosporascus cannonballus*. With limited agricultural land available in Arizona, and limited water, melon growers rely on subsurface drip irrigation systems and re-plant melons in the same fields, often double-cropping in Yuma County. There is a need to kill off melon plant hosts prior to the development of *Monosporascus cannonballus* spores, to reduce soil inoculum and limit infection of the crop that follows. Loss of this use of Vapam would have serious economic impact on the production of melons in Arizona (currently about 30,000 acres). Chloropicrin, the only viable alternative, costs nearly 10 times as much as metam sodium.

Spinach, currently shown on List 2, has some consistent uses of Vapam in Yuma Valley. These are minor (38 uses in five years) but strategic applications.

A major use of Vapam not currently included on either crop list but important to Arizona growers is applications to fallow land for broad-spectrum control of weeds, soil-borne plant pathogens and arthropods, prior to planting. PUR data indicates 140 small-acre applications (2001-2005), primarily in Yuma County, to fallow land. Because of reporting practices of pesticide applicators, some of these are likely associated with melon production as noted above.

We have completed and attached a Soil Fumigant Data form for the use of metam sodium on fallow land and request that this use in Arizona be considered for addition to the risk mitigation list (List 1).

Soil Fumigant Data

Your Contact Information: Al Fournier, fournier@ag.arizona.edu, 520-381-2240

Crop or Crop Rotation: Fallow Land

Soil Fumigants Applied: Metam sodium (Vapam)

Pest(s) Controlled: Used for broad-spectrum control of weeds, soil pathogens & arthropods; a major specific use is for control of *Monosporascus cannonballus* in melons with a post-harvest application after the growing season.

Percent Crop Treated by State, Region, or Area: Uses are limited to Yuma County, Arizona, where they represent 5% of all fallow land applications

Application Rate: Typical application rate is 170.4 lbs AI / acre

Time of Year Application Made: Between Aug and Oct, with most applications occurring in Sept.

Method of Application: Primarily sub-surface drip irrigation, at least most on fallow melon fields

Typical Number of Acres Fumigated Each Day: avg = 31 acres, min = 4 acres, max = 316 acres (only occurred once)

Field Preparation—Flat, Strip, Bedded, etc.: No data on this, but usually bedded for fallow land associated with melon production

Sealing Methods—Tarp, Water Seal, etc: No data; plastic mulch (if used) on fallow melon fields

Best Alternative Controls: Chloropicrin too expensive, no other viable alternatives to Vapam for control of certain pests, including the fungus *Monosporascus cannonballus*.