
A Review of IR-4's Methyl Bromide Alternatives (MBA) Programs for 2001

IR-4 continues to expand its methyl bromide alternatives (MBA) programs to more comprehensive studies in production strawberries and fresh market tomatoes. IR-4 also has added new initiatives in vegetables and strawberries, and for the protection of minor crops stored post-harvest. A review of IR-4's MBA program follows by commodity.

Production Strawberries

The IR-4 2000/2001 MBA research program in production strawberries has several new products and combinations of products not evaluated during the 1999/2000 program. The program this year does include the same number of trials as last year, two in California and two in Florida and, as in the past, all trials are large scale replicated research trials which mimic commercial application. The 2000/2001 strawberry program is supported primarily by funds from cooperating crop protection companies. Trials are being conducted by contract research firms in the two states, Plant Sciences, Inc. in California, and by two firms in Florida, Ag Consultants, Inc. and Spraying Systems, Inc.

Treatments in the 2000/2001 MBA program in strawberries include iodomethane alone and in combination with chloropicrin (60:40 formulation), Enzone applied in combination with chloropicrin and metam sodium, chloropicrin plus metam sodium, Inline/Telone alone and in combination with metam sodium, metam sodium alone, Plant Pro 45 in combination with metam sodium, fosthiazate in combination with Plant Pro 45 and metam sodium and also in combination with chloropicrin and metam sodium, Ditera ES in combination with chloropicrin and metam sodium, Basamid alone, Basamid plus Telone in Florida, and Basamid in combination with chloropicrin and Inline as separate combination treatments in California. Some first time entries included, propylene oxide from Aberco, Inc., Messenger from Eden Biosciences Corporation, Rootshield from BioWorks, Inc., and the Help package from Stoller Enterprises, Inc.

IR-4 is encouraged with the increased company interest in the IR-4 MBA program which is clearly evident from the number of new treatments under evaluation in strawberries. Data from those trials will be reported in future Newsletters. We encourage the reader to visit our website (<http://www.cook.rutgers.edu/~ir4>) for details found in the strawberry protocol.

Fresh Market Tomatoes

The IR-4 MBA program for fresh market tomatoes is being planned for initiation in California in April/May 2001, and in Florida in August/September 2001. Protocol planning meetings were held in California on January 17th and in Florida on February 16th. Treatments to be included in the tomato program are being determined now and will be reported in the summer edition of the Newsletter. A significant change in the program involves locating the two Florida trials in the heart of tomato production areas of the state (one trial each in Immokalee and Bradenton) and the shifting of the conduct of the research from private contract researcher (Ag. Consulting, Inc.) to the University of Florida under the direction of Dr. Jim Gilreath, Gulf Coast Research and Education Center. As in the past, the tomato program will be funded by cooperating agricultural chemical and biopesticide companies.

Telone + Herbicide Program for Vegetables and Strawberries

A new IR-4 MBA program initiated in 2001 for the southeastern U.S. includes shank-applied Telone as a soil fumigant to control nematodes and fungal pathogens followed by the use of various herbicides which provide selective weed control in tomatoes, peppers, melons, and strawberries. This is an important program which has both research and outreach components to address near term solutions needed during the phase out of MB as well as longer term solutions for improved weed control. This program is supported by the USDA-ARS and by cooperating companies, Dow AgroSciences, Gowan, Syngenta, and United Phosphorus. The program is being run under the direction of University of Florida Weed Scientists, Drs. Jim Gilreath, Bradenton and Bill Stall, Gainesville. Tours of the large scale IR-4/USDA-ARS/University of Florida MBA program will be conducted in north and central Florida and in the southern agricultural areas in Florida this summer. Tour dates will be announced later.

Cut Flowers and Bulb Crops

An area of MBA research which has received relatively little attention compared to production strawberries and fresh market tomatoes is the cut flower/bulb crop industry. IR-4 has formed an Alliance comprised of growers in California and Florida, representatives of grower organizations including the California Cut Flower Commission (CCFC) and University and USDA research and extension personnel.

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The first meeting of the Alliance was attended by approximately thirty individuals from California and Florida either directly or by teleconference on January 31st at the office of the CCFC in Watsonville, California. As a consequence of the Alliance meeting, a proposal from the Alliance has been completed for submission to USDA-CSREES for funding.

Propylene Oxide for Protection of In-Shell Nuts, Cocoa Beans, and Dried Fruit in Storage

Developing products to replace post-harvest uses of methyl bromide is receiving relatively little attention. Phosphine is available but due to its corrosiveness to equipment and also to the wide scale resistance of pest organisms to phosphine, its use as a MBA has limitations. An alternative from Dow AgroSciences, sulfuryl fluoride, is in advanced stages of development and shows significant promise as a post-harvest replacement for methyl bromide. However, it is not yet registered, and even after it is registered would leave

only two products, phosphine and sulfuryl fluoride, to replace methyl bromide for protection of commodities in storage.

Propylene oxide is an EPA registered product that has use in nutmeats, cocoa powder, and spices. Aberco, Inc., Seabrook, Maryland, the registrant, is interested in expanding the registration for propylene oxide to include treatment of in-shell nuts, cocoa beans, and dried fruit. The product is highly efficacious when used as labeled, and because of this, IR-4 has accepted it as an active project, conducting GLP residue trials to support expanding the label claims for propylene oxide. The minor crops, (dried fruit, in-shell nuts, and cocoa beans) will be covered in the IR-4 residue program, or if arguments can be successfully made that residue trials are not needed for in-shell nuts and cocoa beans, they would be dropped from the residue program. IR-4 is in the process of determining the commodities to include in the residue program.

Article by Jack Norton

IR-4 National Outreach Specialist Report

IR-4 is best known for its contributions to pest control product clearances for minor crops. However, IR-4 also plays a role in the section 18 exemption process by contributing data for some crops that ultimately result in approval of time-limited tolerances. Part of the section 18 application procedure requires an estimate of potential dollar loss if the pest control product is not approved. IR-4 set out to tally this dollar value for all states/crops where IR-4 data played a part in issuing section 18 exemptions. Data have been collected for the years of 1998, 1999, and 2000 and many interesting facts have emerged. For example in 1999, IR-4 data contributed to 96 specific state/crop section 18's involving 31 states and 35 crops ranging from avocado to wild rice. The estimated potential loss to agriculture without the approval of these section 18's is 707 million dollars. A full report will be published in the next Newsletter. The data for all three years will be made available when formatting is complete.

IR-4 had a display in the New Variety & Research Showcase at the United Fresh Fruit & Vegetable Assoc. 2001 Expo

in Tampa, Florida March 16-19. Prominently featured were a large color poster describing the various aspects of IR-4 (the poster was developed by Emy Pfeil at Beltsville ARS) as well as side panels showcasing the methyl bromide alternatives work with strawberries in Florida and California. Brochures and handouts were available about IR-4 as well as a display of the State Report Cards.

The IR-4 Fact/Budget Sheet was revised for 2001 and new fact sheets on Fruit and Vegetable Consumption For Good Health, the Section 18 Process, and Biopesticides are in the works with more topics to come. We are working on a plan to incorporate some of the topics as Extension Fact Sheets through the Rutgers University system.

The IR-4 PowerPoint slide sets on the web (<http://pestdata.ncsu.edu/IR-4/presentation/index.html>) are due to be updated. If you have additions or changes to suggest, please contact me.

Article by Sandy Perry