Status of IR-4 Methyl Bromide Alternatives (MBA) Program for Minor Crops

Strawberries: Several treatments in IR-4's methyl bromide alternatives (MBA) program established during the fall of 1999 are showing promising results based on yield increases and control of weeds and nematodes. These treatments include Methyl Iodide (MI) alone or in combination with Chloropicrin (PIC), and combination treatments using Inline (Telone C-35) for control of nematodes and soilborne diseases plus Basamid (dazomet) or Metam Sodium for control of annual weeds. Treatments failing to give acceptable results at all test locations include Metam Sodium used alone and Enzone combinations with PIC and Metam Sodium. Metam Sodium performed erratically. The Enzone treatment caused excessive early phytotoxicity and was weak against sting nematode in the Florida trials. These treatments need further study and hopefully will be included in IR-4's fall 2000 strawberry program. Refer to the Winter 1999/2000 edition (Vol. 30 No. 4) of the Newsletter for a detailed description of the treatments under evaluation in IR-4's MBA program in strawberries.

Tomatoes: Due to a heightened interest in IR-4's MBA programs for strawberries and for other minor crops, the list of treatments for tomatoes has been expanded to include several new entries. These include Propargyl Bromide (PB) alone which could potentially serve as a "drop in" replacement for MB, Plantpro 45 (an iodine based product effective against a broad spectrum of nematodes and soilborne plant diseases); Fosthiazate, a contact nematicide with broad spectrum activity, and Chloropicrin EC (PICEC) applied through drip tapes for control of nematodes and soilborne plant diseases. Pebulate will be used to control nutsedge in Florida trials and Basamid (dazomet) and/or Metam Sodium will be evaluated for control of annual weeds in treatments requiring a weed control partner for efficacy comparable to MB. Different application methods are also being investigated for Metam Sodium as "stand alone" treatments for full spectrum weed, nematode, and soilborne disease control comparable to the standard use of MB. Telone C-35 is being added in the Florida trials and Inline in the California trials as "stand alone" treatments for control of nematodes, soilborne diseases, and annual weeds. Pebulate will be used with Telone C-35 for nutsedge control in the Florida trials.

Strawberry Nursery and Cut Flower Alliances: IR-4 is currently involved in the forming of alliances for methyl bromide alternatives research in strawberry nurseries and in cut flowers in California. Members of the alliances represent the private sector, including strawberry nurserymen and cut flower growers and chemical company representatives. The scientific community is represented by members from the U.S. Forest Service, the USDA ARS, Washington State University, and the University of California at Davis and at Riverside. Also represented are the key commodity organizations representing the strawberry and cut flower industries in California, the California Strawberry and Cut Flower Commissions. The purpose of forming these alliances is to assemble leading scientists and stakeholders with specific and dedicated interests in finding and developing methyl bromide alternatives before it is phased out in 2005 and then conduct the research needed to meet the challenges facing these industries. Compared to research in production strawberries and tomatoes, relatively little research has been done to address the methyl bromide alternatives needs for the strawberry nursery and cut flower industries.

Post-Harvest Methyl Bromide Alternatives Research: IR-4 has provided GLP (Good Laboratory Practice) support in the development of Vikane (Sulfuryl Fluoride) gas fumigant for control of insects in stored dried fruits and tree nuts. IR-4's role has been to bring the laboratory conducting the sulfuryl fluoride residue analyses into full GLP compliance and to monitor critical phases of the analyses to assure acceptance of the data by EPA. Dow AgroSciences will submit the residue chemistry and other regulatory data to EPA in support of the registration. This product will be marketed by Dow AgroSciences after it is registered.

IR-4 has been contacted by Aberco, Inc. for assistance in the development of propylene oxide (PPO) for control of stored pests in in-shell nuts (almonds, pecans, walnuts), cocoa beans, raisins, and prunes. Aberco, Inc. is a small company with limited financial resources. They will be required to conduct offgasing and residue tests to meet EPA's registration requirements. PPO is effective against most stored grain insects. It is safe to use and, according to Aberco, is cost effective in relation to methyl bromide. Letters officially requesting IR-4 support through the submission of IR-4 Minor Use Pesticide Clearance Request forms are forthcoming from at least three commodity organizations.

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