PACIFIC AREA WIDE PROGRAM FOR METHYL BROMIDE ALTERNATIVES – ORNAMENTALS

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During the past 5 years the following field trials have been conducted as part of the Pacific Area-Wide program for cut flowers and ornamentals using various combinations of 1, 3-dichloropropene, chloropicrin, and metam: 1) Drip demonstration trial with field-grown calla lilies at Golden State Bulb Growers in Moss Landing, CA. 2) Shank demonstration trial with field-grown calla lilies using at Golden State Bulb Growers in Soledad, CA. 3) In-season application of low doses of methyl iodide, DMDS, furfural, and bromoethanol for pest control in field-grown calla lilies, at Golden State Bulb Growers in Moss Landing and Soledad, CA. 4) Shank and drip demonstration trial with field-grown Gladiolas Glad-A-Way Gardens in Santa Maria, CA. 5) Shank and drip demonstration trial with field-grown Ranunculus at Mellano & Co. in Carlsbad, CA. 6) Drip demonstration and solarization trial with greenhouse-grown Irises at All Season's Flowers in Nipomo, CA. 7) Drip demonstration and solarization trial with greenhouse-grown Freesia at All Season's Flowers in Nipomo, CA. 8) Drip demonstration and solarization trial with greenhouse-grown snapdragons at Skyline Flowers, in Oxnard, CA. 9) Drip demonstration and plastic mulch trial with field-grown Ranunculus 2008 at Mellano & Co. in Carlsbad, CA. 10) A biological pesticides trial with field-grown calla lilies at Golden State Bulb Growers in Moss Landing, CA. 11) Steam demonstration trial with field-grown Ranunculus at Mellano & Co. in Carlsbad, CA. 12) Drip and steam demonstration trial with field grown sun flower 2010 at Pyramid Flowers in Oxnard, CA. Results from these field demonstration trials indicate that the best alternatives to methyl bromide/chloropicrin soil fumigation is a combination of 1, 3-dichloropropene with chloropicrin followed a week later with an application of metam sodium. This treatment routinely controlled *Pythium* spp., but was inconsistent for control of *Fusarium oxysporum* and weeds. The biological pesticides were, for the most part, not effective at controlling *Pythium* spp. Use of steam for control of soilborne pathogens also was inconsistent. Findings from

these field trials have been presented at three field days, five methyl bromide conferences, two APS meetings, and published in two peer-reviewed journal articles. In response to these trials/demonstrations, the major grower of calla lily in California has transitioned away from methyl bromide. They are now using drip applied 1, 3-D/CP and MITC for pathogen and weed control in their crops. An ornamental crop field trial is ongoing at Moss Landing, CA using chloropicrin and 1, 3-dichloropropene and non-permeable tarps as alternatives to methyl bromide in an attempt to control calla lily root rot using reduced rates of fumigants.