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ASI-261: a Potential Non-Fumigant Alternative to Methyl Bromide

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A novel compound, ASI-261, is in development as a pre-plant soil treatment for broad-spectrum pest control. The material had activity against fungi, oomycetes, and nematodes when tested in vitro. In greenhouse assays, no phytotoxicity was observed on tomato or bell pepper when transplanted 5 days after soil treatment. Two small-scale field trials on bell pepper and tomato were conducted and a strawberry trial is underway. Bell pepper yields in small plots were similar to the methyl bromide control. Weed biomass emerging through plant holes in plots receiving the highest ASI-261 rate were slightly greater than the methy I bromide treatment, but were lower than the untreated control (UTC). In the strawberry trial, mortality of introduced inoculum of Macrophomina phaseo/ina was significantly increased with the high rate of ASI-261 compared to the UTC. Trichoderma colony forming units were higher in both ASI-261 treatments than in the untreated and I ,3-dichloropropene treated plots. Sting nematode numbers, while relatively low, were significantly reduced immediately after treatment and were equivalent to numbers extracted from plots treated with I ,3-D. Advantages of using this experimental material include the ability to make applications via drip irrigation with no volatile organic compounds generated, which should result in minimal worker exposure and few regulatory constraints and the broad spectrum of activity against soilborne pests.