

STRAWBERRY PRODUCTION WITH ALTERNATIVE FUMIGANTS APPLIED THROUGH DRIP IRRIGATION SYSTEMS

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This study is part of a comprehensive research project to evaluate the impact of alternative fumigants on strawberry growth and yield, on soilborne pathogens and weeds, and to evaluate economic factors of crop production. The specific objective of this study was to compare alternative fumigants applied by drip fumigation and shank injection for strawberry production in California.

Methods

Several fumigants [InLine, Chloropicrin (Pic), Midas (50% Iodomethane: 50% Pic), and Propargyl Bromide (PrBr) and two application methods (Shank injection and drip fumigation) were evaluated in fruit production fields in the Watsonville, Salinas, and Oxnard areas in the 2000-01 and 2001-02 seasons. InLine (400 lb/ac), Pic (300 lb/ac), Midas (400 lb/ac), and PrBr (180 lb/ac) were applied through two drip tapes per bed. Three rates of Midas (200, 300, and 400 lbs/ac) and three rates of Propargyl Bromide (60, 120, and 180 lbs/ac) were applied by drip fumigation or shank injection. The fruit was harvested once every week throughout the production season and graded into marketable and culls. Yields from the alternative fumigants were compared to yields from shank injection with Methyl Bromide:Pic (67:33) and untreated control.

Results

Fruit yields were significantly greater in the chemical treatments than in the untreated plots. The alternative fumigants produced equivalent or greater yields than Methyl Bromide:Chloropicrin shank injection (Examples are shown in Figures 1 & 2).

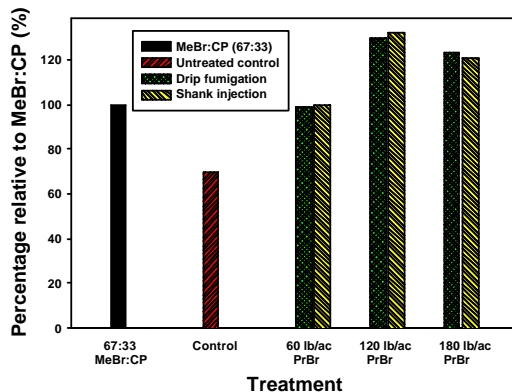


Fig. 1. Total strawberry yield from shank injection and drip fumigation with three rates of propargyl bromide (PrBr) relative to MeBr:CP (275 lb/ac)

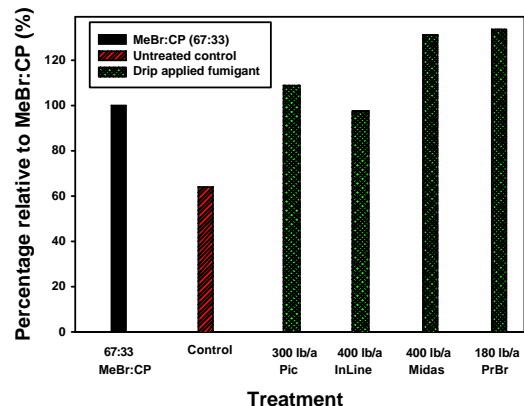


Fig. 2. Total strawberry yield from drip fumigation with alternative fumigants relative to MeBr:CP (275 lb/ac)