ADAPTATION OF SOIL SOLARIZATION TO THE INTEGRATED PEST MANAGEMENT OF SOILBORNE PESTS UNDER HUMID CONDITIONS.

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Soil solarization was shown to be cost effective, compatible with other pest management tactics, readily integrated into standard production practices and a valid alternative to preplant fumigation with methyl bromide under the tested conditions. Compatibility with standard production practices for fresh market solanaceous crops was achieved using strip solarization applied to 20 cm-high, 0.9 m-wide beds. This resulted in soil temperatures 2-4 C above solarization of a flat surface and 1-2 C higher at the edges of the plastic, eliminating the border effect associated with solarization. Solarization, using clear, photo-selective, or gas impermeable plastic, was evaluated in combination with metham sodium, 1,3-dichloropropene plus chloropicrin (Telone C-17), methyl bromide plus chloropicrin (67:33), cabbage residue, azadirachtin, *Myrothecium* species (DiTerra) and *Gliocladium virens*. Following a 40-55 day solarization period, the plastic was painted white and used as a production mulch for a subsequent tomato crop. Similar reductions in the incidence of Fusarium wilt and the densities of *Cyperus esculentus, C. rotundus* and *Helicotylenchus* spp. were achieved with methyl bromide or soil solarization. Solarization significantly reduced the incidence of southern blight and the density of *Paratrichodorus minor* and *Criconemella* species. Densities of *Meloidogyne* spp. and *Rotylenchulus reniformis* and the severity of root galling were significantly reduced when soil solarization was combined with a reduced rate of 1,3-dichloropropene plus chloropicrin (119 kg/ha) applied under a clear gas-impermeable film. The incidence of bacterial wilt was unaffected by any soil treatment. Soil solarization, applied alone or in combination with other pest management tactics produced marketable yields similar to those obtained with methyl bromide.