Soil-borne Pest Control in Mulched Tomato with Alternatives to Methyl Bromide

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Abstract. Five soil fumigants, a contact nematicide and several combinations with pebulate herbicide were compared to methyl bromide/chloropicrin (98 and 2%, respectively) for control of nutsedge, Fusarium wilt and crown rot, and nematodes in tomato (Lycopersicon esculentum) in experiments conducted during the spring and fall of 1993. Chemical treatments did not affect tomato plant vigor during the spring, but plants *were* more vigorous in plots treated with methyl bromide than in those areas treated with SMDC (sodium methyldithiocarbamate), fosthiazate, or the combination of fosthiazate, SMDC. and pebulate during the fall experiment. Dazomet and 1,3 dichloropropene + chloropicrin + pebulate were the only treatments which were as effective as methyl bromide for purple nutsedge (Cyperus rotundus) control. All fumigants reduced Fusarium wilt in both experiments. Fusarium crown rot was reduced by methyl bromide and 1,3 dichloropropene + chloropicrin in the spring, but in the fall all chemical treatments, except those containing SMDC, provided better crown rot control than methyl bromide. The number of tomato plants with root knot nematode galls on the crown roots and the severity of infestation was reduced by methyl bromide and 1,3 dichloropropene

chloropicrin.

Production of marketable fruit was not affected by alternative fumigant treatments compared to methyl bromide during the spring of 1993; however, in the fall, plots treated with fosthiazate alone produced fewer tomatoes than did those which recieved dazomet, SMDC, or 1,3 dichloropropene + chloropicrin + pebulate. Methyl bromide produced greater weight of fruit than chloropicrin, SMDC, or fosthiazate.