

Turkish Journal of Agriculture and Forestry


Turkish Journal

of

Methyl bromide alternatives for presowing fumigation in tobacco seedling production

Agriculture and Forestry

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Abstract: This study aimed to evaluate the effects of soil fumigant alternatives to methyl bromide (MeBr) on the weeds, damping-off, and seedling growth of tobacco. Methyl bromide (90 g m⁻²), dazomet (D) (50 g m⁻²), and metam sodium (MS) (100 mL m⁻²) were evaluated in 2 locations in the Karacasu district of Aydın province, Turkey, February-April 2005. In addition, half doses of D and MS were investigated in 2006. MeBr treatment had 52.5% control against the postemergence damping-off caused by *Pythium* spp., while alternative treatments had no effect on the disease in 2005. In 2006, MeBr and MS (100 mL m⁻²) showed 77.6% and 100% control against the disease, respectively. All fumigant treatments significantly controlled pigweed species (*Amaranthus* spp.), common purslane (*Portulaca oleracea* L.), common lambsquarters (*Chenopodium album* L.), nettleleaf goosefoot (*Chenopodium murale* L.), burning nettle (*Urtica urens* L.), and large crabgrass (*Digitaria sanguinalis* (L.) Scop.), except dazomet (50 g m⁻²) on pigweed (86.2%), common lambsquarters (68.6%), nettleleaf goosefoot (60.5%), and burning nettle (64.3%) at one location in 2005. Similarly, all fumigants, including low doses of MS (50 mL m⁻²) and D (25 g m⁻²), significantly decreased the populations of pigweed species, common purslane, common lambsquarters, prostrate knotweed (*Polygonum aviculare* L.), and sowthistle species (*Sonchus* spp.) in 2006. Tobacco (cv. Akhisar) seedling height and fresh weight increased significantly with treatments of MeBr, MS (100 mL m⁻²), and D (50 g m⁻²) at the 2 locations in both years.

Key words: Damping-off, dazomet, metam sodium, methyl bromide alternatives, tobacco, weed

Turk. J. Agric. For., **35**, (2011), 73-81.

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