

Pre-Plant Drip Applied Fumigation

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Abstract

Trials were conducted in the coastal areas of California to test methyl bromide alternatives, applied by drip irrigation, for the production of cut flowers and bulbs. Drip applications can be used on the small plot size normally treated with the methyl bromide hot gas method, can be grower applied, and can better distribute chemicals with relative low vapor pressure. Chemicals tested included chloropicrin, iodomethane, 1,3-dichloropropene, metham sodium, sodium azide, furfural, and dimethyl disulfide. The chemicals were tested either alone or in various combinations. Weed control was good in 2 calla lily rhizome nursery trials. All the treatments controlled weeds relative to the control, except for sodium azide which did not control nutsedge. In a snapdragon trial none of the tested chemicals controlled malva, clover or groundsel. Cudweed was controlled by the InLine (1,3-dichloropropene + chloropicrin) treatment, but the rest of the treatments were not statically better than the control. Only furfural plus metham sodium controlled sowthistle better than the control. Weed control was lacking in 2 liatris trials. None of the treatments controlled Malva, pigweed, clover, lambsquarters, groundsel, or field bindweed. Most of the treatments controlled mustard and knotweed better than the control, but control was still not good. In three freesia trials weed control was only fair. In the first trial various rates of InLine fro 20 to 56 gpa did not control chickweed, but did control mustard. In a second trial, Midas (iodomethane + chloropicrin) controlled both chickweed and bitter-cress. In a third trial various Midas formulations and rates controlled weeds better that the control, but not well. It is concluded that weed control will be the most challenging aspect of growing cut flower and other ornamental crops without methyl bromide. The best treatments will include metham sodium, either at the time of initial application, or as a sequential application.