

SENSITIVITY OF NARCISSUS FLIES TO METHYL BROMIDE

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Two species of narcissus fly attack the bulbs of Narcissus and Amaryllis and pose a serious quarantine threat upon export of these crops from Israel. The only available fumigant for rapid treatment is methyl bromide (MB). However, recent indications of phytotoxic effects on these bulbs required a re-evaluation of the fumigation schedule.

The sensitivities of the large narcissus fly (*Merodon eques*) and the small narcissus fly (*Eumerus* spp.) to MB were examined in the laboratory. Maggots of both species and pupae of *Eumerus* were obtained from infested narcissus bulbs and exposed in glass chambers at 28°C at different dosages of MB for 4 h periods. Because the *Merodon* develops inside the bulb, maggots of this species were transferred to chambers gouged inside sound bulbs and the bulbs were placed inside the fumigation chambers. For *Eumerus* where infestation is superficial maggots and pupae were suspended in cages inside the fumigation chambers. Probit analyses of mortalities revealed that for *Merodon* the dose required to obtain 99% kill (LD99) was 20.4 g/m³, whereas for *Eumerus* larvae and pupae it was 8.6 and 6.5 g/m³ respectively. The high dosage required to kill *Merodon* may be attributed to the requirement of the gas to penetrate to the target site.