Soil-Gas Phase Distribution of Metam-Sodium Under Drip Applied Fumigation. (S11-nelson151419-Poster)

Authors:

- S.D.Nelson* - *Texas A and M University-Kingsville*
- H.A.Ajwa - *University of California-Davis*
- M.Schutter - *Colorado State University*

Abstract:

The eminent phase-out of methyl bromide by the year 2005, due to environment and health concerns, has hastened the need for alternative soil pesticide control chemicals. One potential alternative is metam-sodium (M-Na) that degrades rapidly to a volatile gas called methyl-isothiocyanate (MITC). This product can be used in field and row cropping where M-Na is typically injected directly into the soil. Another method is the application of an emulsified formulation M-Na via drip irrigation. This study involved the comparison of 50-mm of MS-treated water applied through drip tapes of various flow rates. The objectives were to determine water and MITC gas phase movement throughout the entire 86-cm wide raised bed. Soil gas and moisture samples were measured at 0, 20, and 40 cm away from bed center where a single drip line lay. It was found that an application of 50 mm water in a Hanford sandy loam produced the most even moisture and MITC distribution throughout the bed to a depth of 30 cm.

Corresponding Author Information:

Shad Nelson
Texas A and M University-Kingsville
MSC 156
Kingsville, TX 78363

phone: 361-593-3953
fax: 361-593-3788
e-mail: shad.nelson@tamuk.edu

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