# **Denitrification in Agricultural Soils Fumigated with Methyl Bromide Alternatives. (S03-klose172041-Poster)**

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# Abstract:

The denitrification potential of agricultural soils subjected to drip fumigation of chemical alternatives to methyl bromide is being characterized to evaluate the influence of fumigation on nitrous oxide emissions from soil. In this study, four methyl bromide alternatives (propargyl bromide, methyl iodide, chloropicrin, and 1,3-dichloropropene) were applied to field plots located at two strawberry production sites in the coastal areas of California (Watsonville and Oxnard). Soils were collected 1 week, 4 weeks (at strawberry planting) and 30 or 37 weeks for Watsonville and Oxnard, respectively, after fumigation to study the longer-term impacts of alternatives on denitrification processes. After 1 and 4 weeks, fumigation almost completely inhibited size of denitrifiers and activity of denitrifying enzymes in soils. The response of denitrifying microorganisms differed little between methyl bromide and the four alternatives. Denitrification potential in Oxnard soil tended to be more affected by fumigation than in Watsonville soil. Results from samples collected at peak crop production will be presented.

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chloropicrin, 1,3-dichloropropene, iodomethane, propargyl bromide