

"NEMATODE CONTROL AND PROPERTIES OF FOSTHIAZATE, A METHYL BROMIDE ALTERNATIVE"

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Fosthiazate, *O*-ethyl *S*-(1-methylpropyl)(2-oxo-3-thiazolidinyl)phosphonothioate, is a member of the organophosphate class of chemistry containing a unique thiazolidine ring substituent. Fosthiazate demonstrates excellent nematocidal activity, controlling nematodes both by contact and through ingestion of treated plant parts. Fosthiazate also suppresses some insect pests for up to 45 days following application.

Although its mode of action is considered to be similar to other organophosphate pesticides, namely by cholinesterase inhibition, fosthiazate itself is only a weak cholinesterase inhibitor in laboratory *in vitro* studies.

Fosthiazate is registered for nematocidal control in several countries in Europe, as well as in Asia and Latin America, and was granted an EPA registration for nematode control in tomatoes as a methyl bromide replacement in 2004. Other crop uses under review or consideration are potatoes, peanuts, bananas, coffee, caneberries, grapes, strawberries and Easter lilies.

The unique chemistry of fosthiazate contributes to its relatively low human and non-target avian and aquatic toxicity, which positions it favorably for use as a methyl bromide replacement. Unlike methyl bromide, fosthiazate is not a fumigant, but degrades in soil rapidly through a series of metabolites that result in a significant percentage of the residue being completely mineralized.

Fosthiazate is supported by many grower organizations as an effective nematode control agent that can be used in an integrated pest management program.