

## Systemic Toxicity of Spinosad to the Greenhouse Whitefly *Trialeurodes vaporariorum* and to the Cotton Leaf Worm *Spodoptera littoralis*

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When spinosad was administered at the stem base of tomato plants grown in rockwool, the main substrate used in greenhouses in northern Europe, it was taken up by the roots and transported to the leaves. Laboratory toxicity experiments showed that systemically applied spinosad, at doses as low as 2 mg active ingredient per plant, gave excellent control of nymphs of the greenhouse whitefly *Trialeurodes vaporariorum*, but was less toxic to adults. The toxicity of spinosad on Homoptera has not been documented yet and a dose-response relationship was established. The persistence of toxicity was at least 22 days for whitefly nymphs. A dose-response relationship of systemically applied spinosad was also determined on third-instar larvae of the cotton leaf worm *Spodoptera littoralis*; a dose of 5 mg per plant consistently killed all larvae. The persistence of systemically applied spinosad reached up to 45 days after treatment. Systemically applied spinosad was harmless to the parasitic wasp *Encarsia formosa*.

KEY WORDS: Spinosad; systemic; toxicity; *Trialeurodes*; *Spodoptera*; *Encarsia*.

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