

## BIOLOGICAL CONTROL OF SPIDER MITES IN LONG ISLAND VINEYARDS

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**Abstract** The mite *Typhlodromus pyri* is can, where it is conserved, provide complete biological control of European red mite. We released *T. pyri* into to vineyards on Long Island in 1996 and into an additional two vineyards in 1997. *Typhlodromus pyri* were recovered from all four release locations. Where the predators were released in 1996, *T. pyri* numbers were relatively high in early summer during 1997, but then declined in number. At one of these sites *T. pyri* apparently provided biological control of European red mite. Where *T. pyri* were released in 1997, the predators were moderately abundant during the entire season. At both of these locations *T. pyri* provided biological control of European red mite. *Typhlodromus pyri* were also recovered from plots where the predators were not released. This suggests that *T. pyri* are endemic to Long Island vineyards, but are probably not as resistant to certain pesticides as those predators from Geneva, NY.

### Introduction

Spider mites [European red mite (*Panonychus ulmi*) and two spotted spider mite (*Tetranychus urticae*)] have become a serious pest of grapes on Long Island. Currently, chemical pesticides are relied on to control spider mites. This is ill-advised because spider mites develop resistance very rapidly to acaricides, pesticide use is highly regulated on Long Island and the future of chemical control there is highly tenuous, and most importantly, there is a cheaper and more reliable approach: biological control.

Spider mites are an induced pest caused by the absence of natural enemies that regulate pest mite numbers. To achieve spider mite biological control where it does not occur an effective natural enemy species must be present and these must be conserved by restricting pesticide use to materials that are not highly deleterious to the mite predators. A highly effective predator of European red mite in temperate grape plantings is the phytoseiid *Typhlodromus pyri*. When conserved, this predator has been shown to obviate the need for miticides. Unfortunately, *T. pyri* does not appear to be extant on Long Island. During 1997 we continued the work begun in 1996 by pursuing two objectives:

- Objective 1. Monitor the dynamics between *T. pyri* and European red mite in vineyards where these predators were released in 1996.
- Objective 2: Release *T. pyri* into two additional Long Island vineyards and determine their ability to reproduce and survive there.

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