A temporal escape of one of two pest species from control by Amblyseius swirskii, when a second prey is present

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The effectiveness of using one species of predator as control agent against several pests simultaneously is difficult to predict. This is because two pest species can affect each other's densities indirectly through the shared natural enemy and, depending on the time scale, the indirect interaction mediated by a predator may be detrimental or in favour of biological control. We present evidence for a temporal escape of one of two pest species from control when a second prey is present. Amblyseius swirskii is a generalist predator, widely used for control of whitefly and thrips in greenhouse crops. Initially, we found significantly higher numbers of thrips larvae in greenhouse compartments where both pests were present compared to compartments where only one pest was present. More thrips larvae escaped predation because the predators dispersed slower in compartments with two pests present. After six weeks this effect was overruled by the higher total number of predators in
greenhouses with two prey species. Moreover, the average yield of cucumbers did not differ between compartments with or without a second pest present. Successful biological control was achieved, despite the temporal higher numbers of thrips.