

Mites, lemon trees and ground cover interactions in Mafra region

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Abstract: Monthly samples were collected from April 2002 to March 2003 in three lemon orchards of Mafra (Oeste region of Portugal) aiming at identifying the species diversity and abundance of mites in both lemon trees and ground cover vegetation. Three modalities of ground cover management were installed in each of three orchards: resident vegetation, sowing of selected plant species and herbicide application. Low mite populations were observed on lemon trees, namely of the phytophagous species *Aceria sheldoni* (Ewing), *Panonychus citri* (McGregor) and *Polyphagotarsonemus latus* (Banks). Phytoseiids, especially *Amblyseius stipulatus* Athias-Henriot, and the tydeids *Orthotydeus californicus* (Banks) and *Tydeus formosus* (Cooreman) were the most common mites. The population levels of phytoseiids and tydeids on lemon trees were lower in herbicide, in comparison with both ground cover modalities. From the 208 plant species identified in ground cover vegetation, 33 were host plants of mites with agricultural interest, namely *Solanum nigrum* L., *Rubus ulmifolius* Schott, *Conyza bonariensis* (L.) Cronquist, *Lavatera cretica* L. and *Convolvulus arvensis* L. *Tetranychus* spp. and phytoseiids, especially *A. stipulatus*, were the predominant mites. Lists of phytophagous, predators and indifferent mite species associated to plant species of ground cover vegetation are given, as well as some acquirements on the three different groups and the relationship existing between ground cover vegetation and lemon trees mite populations.

A. stipulatus, the most widespread phytoseiid mite in Portuguese citrus, was the predominant phytoseiid species found on lemon trees and ground cover vegetation in the three studied lemon orchards.