

## Article

## Mites (Mesostigmata, Prostigmata, Astigmatina) associated with weeds among physic nut crops (*Jatropha curcas* L.: Euphorbiaceae) in Brazil

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### Abstract

A better knowledge of the mite fauna that lives on weeds among crop plants is relevant to the determination of appropriate crop management, as these plants may support reservoirs and/or be alternative hosts for predatory or phytophagous mites important to the cultivated plants. In this study, a survey of the mite fauna from 20 weed species found in four plantations of Physic nut (*Jatropha curcas* L.) (Euphorbiaceae) in Brazil was carried out between May 2008 and May 2009. Mites belonging to the Mesostigmata, Prostigmata and Astigmatina (= Astigmata) were identified and, altogether, 38 species were found. Three species of plants stood out as hosts of the greatest variety of mites: *Glycine wightii* Wight & Arn. (18 species), *Sida santaremnensis* Monteiro (16) and *Tridax procumbens* L. (17). *Glycine wightii* and *S. santaremnensis* supported similar ranges of predators and phytophages, while *T. procumbens* stood out by hosting the largest number of predatory species compared to phytophages. The most commonly found mite was *Pronematus* sp. (Iolinidae), occurring on 18 of the 20 plants analyzed.

**Key words:** Acari, agroecology, Astigmata, Mesostigmata, Prostigmata, spontaneous plants

### Introduction

Weeds are always along the margins of agricultural cultivations. These plants in traditional management tend to be eliminated, because of the belief in their damaging effects on cultivated plants by competing for nutrients and water (Arruda *et al.* 2004). However, Altieri (1999) points out that, before eliminating weeds, in depth studies are needed to understand their role in the agroecosystem, considering the positive and negative effects they can exert on cultivated plants. Researches show that, if properly handled, weeds may turn into useful tools against pests for farm workers by being reservoirs of predatory species (Landis *et al.* 2000; Altieri *et al.* 2003).

Mites have to be highlighted among the organisms that use plants in general as habitats (Moraes & Flechtmann 2008). There is a range of plant-inhabiting mites with agricultural relevance. Although many of them are phytophagous and they cause damage to the plants (Jeppson *et al.* 1975), there are also predatory mites that can prey on them and keep control of their population (Gerson *et al.* 2003). Therefore, the viability of keeping or eliminating some weed species of the cultivated area may depend on the mite fauna hosted, given that the plants may encourage or keep in the environment useful mites for the crops, such as the predators, or injurious ones, such as the phytophages.