

HOUSE DUST MITES IN SÃO JOSÉ DO RIO PRETO, STATE OF SÃO PAULO, BRAZIL

House dust mite fauna in different regions of the world varies widely, and the predominant species in each region depends on prevailing temperature and humidity conditions. Brazil is highly favourable to the development of dust mites because of its tropical climate, with mean relative air humidity and annual temperatures approximately 70% and 27°C, respectively (van BRONSWIJK, 1981; FLECHTMANN, 1986). São José do Rio Preto (20°48' S, 49°22' W) is located in the northwest of State of São Paulo, one of the driest and hottest regions in the state with climate Cwa-Aw (Köppen classification) and two, very different seasons: one, hot and humid and other cold and dry (BARCHA & ARID, 1971)

Studies conducted in Brazil have shown the predominance of mites of the families Pyroglyphidae, Glycyphagidae, Cheyletidae and Acaridae (BINOTTI et al., 2001; EZEQUIEL et al., 2001, SILVA et al., 2005). According to ROSA & FLECHTMANN (1979), mites in the family Pyroglyphidae are the most abundant in house dust; specimens of the genus *Dermatophagoides* are the most numerous (SPIEKSMAN, 1970; WHARTON, 1976).

To study the mite fauna associated with house dust in São José do Rio Preto, a total of 30 monthly samples were collected at daytime, from April 2002 to January 2003, samples were taken from bedrooms of three houses.

The samples were collected at approximately 7:00 a.m. at low-light intensity, using an 800 W vacuum cleaner and disposable filter, from mattress frames, floor underneath beds, and crevices in the wood placed on the lowest part of walls and adjacent to the floor. The suction time was approximately five minutes. After the collection at each site, the filter was removed and taken to the laboratory in labelled plastic bags, where the samples were kept at 10°C for up to one week before processing.

To analyze the mites in each sample the dust was processed in mesh sieves (2.0, 1.0, and 0.25 mm²), to separate mites from larger debris (fibres, hair, sleet, or other granular materials); 1g of the sieved material was examined using a stereoscopic microscope. The different kinds of mites were separated and slide-mounted in Hoyer's medium (FLECHTMANN, 1975).

Mites were collected from 22 (73%) of the samples (Table 1). Five-hundred and fifty-eight mites belonging to 12 species of six families were registered. Greater abundance and richness were registered in the

families Pyroglyphidae (342 individuals and six species) and Cheyletidae (205 individuals and three species). *Dermatophagoides farinae* Hughes was the most abundant (162 individuals) and most frequent species, it was collected from 16 samples. This normally occurs in mattresses and in furniture covered with cotton fibres, and can be found at high population levels in daily used furniture such as beds (MITCHELL et al., 1969). WHARTON (1976) reported that *D. farinae* has a tendency to predominate in regions with long drought periods, as is the case in the northwestern region of São Paulo State. According to BINOTTI et al. (2001), the species *D. farinae* occurs less frequently in Brazil as compared with *D. pteronyssinus* (Trouessart) and *Blomia tropicalis* (van Bronswijk, Cock & Oshima), both found in large population levels in Brazil. Although *D. farinae* has been reported in low numbers in Brazil (ROSA & FLECHTMANN, 1979), 39% of the 532 mite specimens collected in house dust in Belo Horizonte (State of Minas Gerais) were *D. farinae* and only 9 % were *D. pteronyssinus*. In this study, only three individuals of *D. pteronyssinus* were found in two samples.

Euroglyphus maynei (Cooreman) and *Pyroglyphus africanus* (Hughes) are found in house-dust habitats and in stored food products (Hughes 1976). These species were less abundant than *D. farinae*; 93 and 51 individuals were found, respectively (Table 1).

Cheyletidae was represented by three species. *Cheyletus malaccensis* Oudemans, the second most abundant of all species found (129 individuals) and third most frequent (13 samples), corresponded to almost twice the number of *Cheletonella* sp, the second most frequent (14 samples). The mites of this family are important for house ecosystem equilibrium because they prey on other mites and a variety of small arthropods. Among the Cheyletidae, *C. malaccensis* has been the most frequently found in house dust in Brazil (BINOTTI et al., 2001).

Blomia tropicalis, although important in tropical countries and very frequently collected from house dust in Brazil (BINOTTI et al. 2001), was rare in our study. For TUROS (1979) and FELDMAN-MUHSAM et al. (1985), mite prevalence in house ecosystems vary according to regional characteristics, particularly the local climatic conditions.

The regional climatic conditions probably affected the mite fauna composition. Further studies on the seasonal occurrence of mites should enhance the

knowledge on the dynamics of mite taxocenosis associated with house dust in São José do Rio Preto.

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Table 1. Mite abundance, relative frequency (RF), positive samples and prevalence (PR) in 30 home dust samples taken from April 2002 to January 2003, in São José do Rio Preto, SP, Brazil.

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Táxon	Abundance	RF (%)	Positive Samples	PR (%)
ASCIDAE	6	1.07	6	20
<i>Blattisocius</i> sp.	6	1.07	6	20
CHEYLETIDAE	205	36.74	14	46.67
<i>Cheletonella</i> sp.	73	13.08	14	46.67
<i>Cheyletus malaccensis</i>	129	23.12	13	43.33
Not identified	3	0.54	3	10
ECHYMIPODIDAE	1	0.18	1	3.33
<i>Blomia tropicalis</i>	1	0.18	1	3.33
LAELAPIDAE	1	0.18	1	3.33
Not identified	1	0.18	1	3.33
PYROGLYPHIDAE	342	61.29	18	60
<i>Dermatophagoides farinae</i>	162	29.03	16	53.33
<i>Dermatophagoides pteronyssinus</i>	3	0.54	2	6.67
<i>Euroglyphus maynei</i>	93	16.67	10	33.33
<i>Pyroglyphus africanus</i>	51	9.14	7	23.33
Not identified	1	0.18	1	3.33
Immature	32	5.73	5	16.67
ORIBATIDA	3	0.54	2	6.67
Not identified	3	0.54	2	6.67
Total	558	100	22	73.33