

MITE (ARTHROPODA, ACARI) ASSOCIATES OF PALMS (ARECACEAE) IN BRAZIL I. PRESENT STATUS AND NEW RECORDS

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ABSTRACT. This paper presents 72 new records and 10 records from literature on the distribution of nine species of phytophagous mites and nine species of predatory mites from 13 species of palms in 13 Brazilian States.

KEY WORDS. Eriophyidae, Tetranychidae, phytophagous mites

A considerable number of mites (Acarina) have been reported in palms from many areas of the world, but very little is known about mite associates with palms in Brazil.

BONDAR (1938), *vide* LEPESME (1947), mentioned an acarid mite from fruits of *Syagrus coronata* (syn. *Cocos coronata*), Mart. in Brazil, probably *Tyrophagus putrescentiae* (Schrank, 1778). AQUINO & ARRUDA (1967) observed the same species in Pernambuco, causing intense leaf chlorosis and death of young coconut plants in nurseries. FLECHTMANN (1966) reported the spider mite *Tetranychus mexicanus* (McGregor) from coconut leaves in São Paulo and FLECHTMANN (1989) found *A. guerreronis* Keifer on the ornamental palm *Lytocarium weddellianum* (H. Wendl) and, in 1994 he described *Amrineus cocofolius* from coconut leaves, both from São Paulo.

MATERIAL AND METHODS

Leaves and fruits of the following palm species were collected from natural stands and commercial grooves (in case of coconut) in 13 Brazilian States, for examination: Coconut – *Cocos nucifera* L; African oil palm – *Elaeis guineensis* Jacq.; Babaçu – *Orbignya phalerata* (Mart.) (syn.: *O. speciosa*); Ouricuri – *Syagrus* sp.; Jervá – *Syagrus romanzoffiana* (Cham.); Pupunha – *Bactris gasipaes* Kunth. (syn. *Guilielma speciosa* Mart.); Palmeira-de-Petropolis – *Lytocarium weddellianum* (H. Wendl.) (syn. *Cocos weddellianum*); Palmeira-leque – *Livistonia aff. chinensis* (Jacq.) (syn. *Latania*); *Euterpe oleracea* Mart.; Palmito – *Euterpe edulis* Mart.; Palmeira-imperial – *Roystonea oleracea* (Jacq); Tamareira ornamental – *Phoenix canariensis* Hort. ex Chabaud; and *Attalea* sp..

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Eriophyid mites were mounted in a modified Berlese medium (AMRINE & MANSON 1996); other mites were mounted in Hoyer's medium and oribatid mites were preserved in 70% ethanol. Mites in the microscopic preparations were studied under phase contrast microscopy.

Botanical names and synonymies are in accordance with REHM (1994) and RODRIGUES *et. al.* (1996).

RESULTS AND DISCUSSION

The distribution of phytophagous mite associates of coconut in Brasil is summarized in table I and of other palms in table II, based on specimens collected in this study and on data from previous studies and literature. The distribution refers to Municipalities in each state surveyed and L and N indicate results from literature and new records, respectively.

Mite species, according to their families, are:

Eriophyidae

Aceria guerreronis Keifer, 1965. This is the only species considered to be a serious pest of coconuts; it was described from Mexico and is presently known from this host throughout the Americas and West Africa and from *Lytocarium weddellianum* in São Paulo, Brazil. MOORE & HOWARD (1996) presented a comprehensive review on its pest status and ecology.

Retracrus johnstoni (Keifer, 1965). This species was first collected from *Chamaedorea* sp. palm originating in Mexico and intercepted in quarantine in Texas, USA. The specimens collected in Brazil from coconut and *S. romanzoffiana* were identified as *R. johnstoni*; further specimens collected from *E. oleracea* are morphologically intermediate in between *R. johnstoni* and *R. elaeis* Keifer, the only two species known in the genus. More collectings are necessary to clarify the real taxonomic status of the specimens collected in this study.

Amrineus cocofolius Flechtmann, 1994. This species was described from a few specimens collected from coconut leaves in Jales, São Paulo. These mites are leaf vagrants. New distribution records are from the same host in Sergipe, Bahia and Pernambuco, showing the wide distribution of the species.

Notostrix attenuata Keifer, 1963. This species was described from coconut leaves in the Philippines.

Notostrix jamaicae Keifer, 1970. This species, described from coconut leaves from Jamaica, is recorded in Brasil for the first time, from *S. romanzoffiana* in Brasília, DF, and Rio de Janeiro, and from *Attalea* sp. in Brasília.

Tetranychidae

Three species of spider mites have been found on palms in Brazil.

Tetranychus mexicanus (McGregor, 1950). This spider mite occurs on a large number of plants throughout the Americas. It was reported from coconut leaves in São Paulo and new records are from leaves and fruits of this host in Sergipe, Bahia, Paraíba, Pernambuco, Maranhão and Minas Gerais. It was also found on *Livistona* sp. in Paraíba, *B. gasipaes* in Pernambuco, *O. phalerata* in Maranhão and *E. guineensis* in Pará.

Table I. Phytophagous mite associates of coconut (*Cocos nucifera* Linnaeus) in Brazil. (N) New record, (L) cited from literature, (Ag) *Aceria guerreronis*, (Rj) *Retractus johnstoni*, (Na) *Notostrix attenuata*, (Tm) *Tetranychus mexicanus*, (Tn) *Tetranychus neocaledonicus*, (Ac) *Amrineus cocofolius*, (Bp) *Brevipalpus phoenicis*.

State	Municipality	Ag	Rj	Ac	Na	Tm	Tn	Bp
Alagoas	Coruripe	N						
	Maceió	N						
Bahia	Indiaroba		N	N				
	Itaberaba			N		N	N	N
	Itacimirim							N
	Itaparica					N		
	Una	N						N
Ceará	Amontada		N					
Maranhão	Timon	N				N		
Minas Gerais	Patos de Minas	N						
	Uberaba					N		
Paralba	Frei Martinho	N				N		
	João Pessoa	N	N					
Pernambuco	Mamanguape	N				N		
	Goiana	L				N		N
	Igarassu	L						
	Ipojuca	L	N					N
Rio Grande do Norte	Itapirema	N				N		
	Petrolina	N						
	Natal	N						
	Pedro Velho	N						
Rio de Janeiro	Itaguaí	N						
	Santa Cruz	L						
São Paulo	Jales			L				
	Piracicaba					L		
Sergipe	Aracaju	L	L	N		N		N
	Areia Branca	N						
	Estância	N	N					
	Ilha das Flores	N		N				
	Itaporanga D'ajuda	N	N			N		N
	Japaratuba	N						
	Pacatuba	N						
	Pirambu *	N	N		L			
	Santa Luzia	N	N					
	São Cristóvão	N	N					
Umbauba			N					

*) *Retractus* sp..

Tetranychus neocaledonicus André, 1933. This species is well distributed throughout tropical and subtropical areas of the world and has been reported on a variety of plants. This is the first record of this species on palms in Brazil, from coconut leaves in Bahia and from *B. gasipaes* leaves in São Paulo.

Oligonychus sp.. Several females of an *Oligonychus* species were collected from leaves of *R. oleracea* in Minas Gerais, and *B. gasipaes* in Piracicaba, São Paulo.

Tenuipalpidae

Only small number of false spider mites have been collected. So far only one species was identified, *Brevipalpus phoenicis* (Geijskes, 1939). This species was collected from *P. canariensis* in Brasília, *R. oleracea* in Sete Lagoas, *E. guineensis* and *E. oleracea* in Santa Bárbara, *E. edulis* in Itatiaia and *Syagrus* sp. in Santa Luzia, Sergipe.

Table II. Phytophagous mite associates of palms other than coconut (*Cocos nucifera* Linnaeus) in Brazil. (N) New record, (L) cited from literature, (Ag) *Aceria guerreronis*, (Rj) *Retractus johnstoni*, (Nj) *Notostrix jamaicae*, (Tm) *Tetranychus mexicanus*, (Tn) *Tetranychus neocaledonicus*, (Bp) *Brevipalpus phoenicis*, (Osp) *Oligonychus* sp..

Locality	Palm	Ag	Rj	Nj	Tm	Tn	O sp.	Bp
Distrito Federal								
Brasília	<i>Attalea</i> sp.			N				
	<i>Syagrus romanzoffiana</i>			N				
	<i>Phoenix canariensis</i>							N
Maranhão								
Timon	<i>Orbignya phalerata</i>				N			
Minas Gerais								
Sete Lagoas	<i>Roystonea oleraceae</i>						N	N
Pará								
Santa Barbara	<i>Elaeis guineensis</i>				N			N
	<i>Euterpe oleracea</i> *		N					N
Paraíba								
Mamanguape	<i>Livistona</i> sp.				N			
Paraná								
Arapoti	<i>Syagrus romanzoffiana</i>		N					
Pernambuco								
Itapirema	<i>Bactris gasipaes</i>				N			
Petrolina	<i>Bactris gasipaes</i>				N			N
Rio de Janeiro								
Itatiaia	<i>Syagrus romanzoffiana</i>		L		N			
	<i>Euterpe edulis</i>							N
São Paulo								
Indaiatuba	<i>Lytocarium weddellianum</i>	L						
Piracicaba	<i>Bactris gasipaes</i>					N		
Sergipe								
Santa Luzia	<i>Syagrus</i> sp.							N

*) *Retractus* sp..

Phytoseiidae

Ocasionalmente predatory mites of the family Phytoseiidae were collected: *Amblyseius chiapensis* DeLeon, 1961, from *O. phalerata* leaves in Timon, Maranhão; *Euseius alatus* DeLeon, 1966, from coconut leaves in Aracaju, Sergipe; *Euseius citrifolius* Denmark & Muma, 1970 and *Amblyseius* sp. from *R. oleracea* in Sete Lagoas, Minas Gerais; *Typhlodromips* sp. and *Amblyseius* sp. from *E. edulis* in Parque Nacional do Itatiaia, Rio de Janeiro and *Amblyseius herbicolus* (Chant, 1959) from *S. romanzoffiana* in Arapoti, Paraná.

Cheyletidae

Cheyletid mites have been collected as follows: *Cheletogenes ornatus* (Caneistrini and Fanzago, 1876) from coconut leaves in Fortaleza, Ceará and *Hemichyleletia* sp. from coconut leaves in Praia do Forte, Bahia.

Stigmaeidae

Specimens of *Zetzellia* sp. were collected from leaves of *E. edulis* in Viçosa, Minas Gerais.

Other mites

Predacious mites of the families Bdellidae and Cunaxidae, although scarce, tydeid mites (*Tydeus* sp.), as well as oribatid mites, have been observed, mainly on the older palm leaves.

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