

MITES FLUCTUATION POPULATION ON PEACH TREE (*Prunus persica* (L.) Batsch) AND IN ASSOCIATED PLANTS¹

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ABSTRACT - Despite the importance of peach (*Prunus persica* (L.) Batsch) in Rio Grande do Sul, little is known about mites fluctuation population considered important to this crop. The objective of this study was to know the population diversity and fluctuation of mite species associated with Premier and Eldorado varieties in Roca Sales and Venâncio Aires counties, Rio Grande do Sul. The study was conducted from July 2008 to June 2009 when 15 plants were randomly chosen in each area. The plants were divided in quadrants and from each one a branch was chosen from which three leaves were removed: one collected in the apical region, another in the medium and the other in the basal region, totalizing 180 leaves/area. Five of the most abundant associated plants were collected monthly in enough amounts for the screening under the stereoscopic microscope during an hour. A total of 1,124 mites were found belonging to 14 families and 28 species. *Tetranychus ludeni* Zacher, 1913, *Panonychus ulmi* (Koch, 1836) and *Mononychellus planki* (McGregor, 1950) were the most abundant phytophagous mites, whereas *Typhlodromalus aripo* DeLeon, 1967 and *Phytoseiulus macropilis* (Banks, 1904) the most common predatory mites. The period of one hour under stereoscopic microscope was enough to get a representative sample. In both places evaluated the ecologic indices were low, but little higher in Premier (H' 0.56; EqJ: 0.43) when compared to Eldorado (H' 0.53; EqJ 0.40). In Premier constant species were not observed and accessory only *Brevipalpus phoenicis* (Geijskes, 1939), *T. ludeni* and *T. aripo*. Higher abundance was observed in December and January and bigger amount in April. Already in Eldorado, *T. ludeni* and *P. ulmi* were constants. Greater abundance was observed in November and December, whereas grater richness in December and January. In both orchards were not found mites in buds. *Tetranychus ludeni* is the most abundant phytophagous mites with outbreak population in November, December and January and high predator diversity was observed on associated plants and on peach plants, indicating the existence of species mobility in peach orchard.

Index terms: Acari, biological control, *Panonychus ulmi*, *Tetranychus ludeni*, *Typhlodromalus aripo*.

FLUTUAÇÃO POPULACIONAL DE ÁCAROS NA CULTURA DO PESSEGUEIRO (*Prunus persica* (L.) Batsch) E EM PLANTAS ASSOCIADAS

RESUMO - Apesar da grande importância da cultura do pêssego [*Prunus persica* (L.) Batsch] no Rio Grande do Sul, pouco se conhece sobre a diversidade e a flutuação populacional de ácaros considerados importantes para esta cultura. O objetivo deste trabalho foi conhecer a flutuação populacional das espécies acarinas associadas às cultivares Premier e Eldorado nos municípios de Roca Sales e Venâncio Aires, Rio Grande do Sul. O estudo foi realizado no período de julho de 2008 a junho de 2009, quando foram amostradas 15 plantas escolhidas ao acaso numa área em cada município. As plantas foram divididas em quadrantes, e de cada quadrante foi escolhido um galho de onde foram retiradas três folhas das regiões apical, mediana e basal, totalizando 180 folhas/área. Foram coletadas, mensalmente, parte de cinco plantas não cultivadas mais abundantes. O período de uma hora sob microscópio estereoscópico foi suficiente para se obter uma amostra representativa. Um total de 1.124 ácaros foi coletado pertencentes a 14 famílias e 28 espécies. *Tetranychus ludeni* Zacher, 1913, *Panonychus ulmi* (Koch, 1836) e *Mononychellus planki* (McGregor, 1950) foram os ácaros fitófagos mais abundantes, enquanto *Typhlodromalus aripo* DeLeon, 1967 e *Phytoseiulus macropilis* (Banks, 1904) os ácaros predadores mais comuns. O esforço amostral foi suficiente. Nos dois pomares avaliados, os índices ecológicos foram baixos, mas um pouco superiores em Premier (H' 0,56; EqJ: 0,43) quando comparados a Eldorado (H' 0,53; EqJ 0,40). Em Premier não foram observadas espécies constantes, apenas acessórias com *Brevipalpus phoenicis* (Geijskes, 1939), *T. ludeni* e *T. aripo*. Maior abundância foi observada em dezembro e janeiro, e maior quantidade em abril. Em Eldorado, *T. ludeni* e *P. ulmi* foram constantes. Maior abundância foi observada em novembro e dezembro, e maior quantidade em dezembro e janeiro. Não foram observados ácaros nas gemas. *Tetranychus ludeni* é o ácaro fitófago mais comum, com picos populacionais em novembro, dezembro e janeiro. Alta diversidade de ácaros predadores foi observada tanto em plantas associadas como em plantas de pessegueiro, indicando mobilidade das espécies predadoras na cultura.

Termos para indexação: Acari, controle biológico, *Panonychus ulmi*, *Tetranychus ludeni*, *Typhlodromalus aripo*.

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INTRODUCTION

The peach culture represents an important activity to fruit culture sector to the state of Rio Grande do Sul. In Roca Sales and Venâncio Aires counties, fruit cultivation represents income and stimulus to farming family. According to IBGE (2007), Roca Sales produced 520 tones while Venâncio Aires 72 tones of fruit.

The peach culture is attacked by diseases and pests where mites stand up. In *Prunus* spp., the Eriophyoidea *Aculops berochensis* Keifer and Delley 1971, *Aculus fockeui* (NALEPA; TROUËSSART, 1891), *Diptacus gigantorhyncus* (NALEPA, 1892) and *Eriophyes insidiosus* (KEIFER; WILSON 1955) are reported as economic level (CASTAGNOLI; OLDFIELD, 1996). *Aculus fockeui* is widely recognized as causing symptoms on young leaves of its hosts which appear similar to those caused by infections by viruses. Their feeding produces the well-known silvering of peach foliage that develops late in the season just before the leaves drop. Another result of mite's feeding has been termed "yellow spot", which is characterized by yellow spotting and chlorosis alongside the veins, accompanied by upward longitudinal folding to the leaf margin into a trough like structure (CASTAGNOLI; OLDFIELD, 1996; KEIFER et al., 1982; JEPPSON et al., 1975). In severe infestations reduce the production and quality of fruits (KEIFER et al., 1982; JEPPSON et al., 1975). In United State of America, *Metaseiulus occidentalis* (Nesbitt 1951) and *Zetzellia mali* (Ewing 1917) are important mite predator of this species; in Italy, *Agistemus collyerae* Gonzales, 1963, *Amblyseius andersoni* (Chant 1957) and *Amblyseius stipulatus* Athias-Henriot 1960 were found associated with high population of eriophyds mite in this crop (CASTAGNOLI; OLDFIELD, 1996).

Among the tetranychids mites stand up *Tetranychus urticae* (KOCH, 1836), *Tetranychus desertorum* (Banks, 1905) and *Tetranychus mexicanus* (McGREGOR, 1950) (FLECHTMANN, 1979). The active phases of these mites develop on abaxial face of leaf beginning along the main vein and expanding around the limb as the population grows. They weave a large amount of web. On the underside of the leaf, nearby at the veins, notice white and silvery gray patches and in the upper face appears chlorotic patches. Intensity attached leaves show the limb slowly wavy and the young leaves reaching to bend over and wrapping due to attack (FLECHTMANN, 1979; JEPPSON et al., 1975). Phytoseiidae mites are natural enemies more commonly associated to

tetranychids in natural environment and agroecosystems (McMURTRY; CROFT, 1997).

Although the peach culture has an economic importance to the state, little is known about the population dynamic, as well as the species associated to culture. This fact highlights the importance to realize dynamics studies, because only with information would be possible to suggest strategies on the management of pest mite. This work aims to know the diversity and population fluctuation of mites associated to Premier and Eldorado cultivars and plants associated, on harvest 2008/2009, in state of Rio Grande do Sul.

MATERIALS AND METHODS

This study was conducted monthly from July 2008 to June 2009 in the peach culture in two orchards in the counties of Roca Sales (29° 11' S 51° 47' O), with the cultivar Premier, and in Venâncio Aires (29° 30' S 52° 19' O), with the cultivar Eldorado. Both areas had three hectares and ten years old. No pesticides treatment was applied in the areas during the study. Premier area was localized nearby tobacco crop, while in Eldorado area also was cultivated other fruits as guava, orange and bergamot.

Monthly were randomly sampled 15 plants, which were divided into quadrants and from each one were chosen a branch where were removed three leaves, one in the apical region, one in the medium and another in the basal, totalizing 180 leaves/area. At the same time, parts of five associated plants more commons were collected from every area for an hour sampling effort under microscope stereoscopic to count, collect and remove the mites. The counting was made directly on the leaves with microscopic stereoscopic observing both leaves faces. Mites where collected with fine paintbrush and stored in alcohol 70% to posterior mounting and identification. All mites were mounting at Hoyer's medium (JEPPSON et al., 1975). Representative specimens of each species found were deposited on the mites reference collection of the Museum of Natural Science at UNIVATES University Center (ZAUMCN), Lajeado, Rio Grande do Sul.

The J-Shanon evenness indicated the preference between the sampled areas (ZAR, 1999). To analyze the evenness and Shannon-Wiener index was utilized the software Diversity of Species - DivEs 2.0 version. The species dominance was defined using the formula: $D\% = (i/t) \cdot 100$, where i = total specimens and t = total of specimens collected and clustered according to the categories establish by Friebe (1983);

eudominant ($\approx 10\%$), dominant ($5\leq 10\%$), subdominant ($2\leq 5\%$), eventual ($1\leq 2\%$) and rare ($D < 1\%$). Climate Parameters was provided by UNIVATES University Center Meteorological Station (2009).

RESULTS

From a total of 1,124 mites, 28 species were collected belonging to 14 families (Table 1). Phytoseiidae was the family with higher diversity, with nine species, followed by Tetranychidae, with three species. *Tetranychus ludeni* Zacher, 1913, *Panonychus ulmi* (KOCH, 1836) and *Mononychellus planki* (McGREGOR, 1950) were the most abundant phytophagous mites, whereas *Typhlodromalus aripo* DeLeon, 1967 and *Phytoseiulus macropilis* (BANKS, 1904) the most common predatory mites. The sample size was enough, because the collector curve found the stability in May, after eleven collects (Figure 1). Thus, the number would be the minimum samples required to represent satisfactorily the mite community in peach crop, in Taquari Valley. However, the number of samples was sufficient when also were evaluated the associated plants. Throughout the period, Venâncio Aires orchard showed most species. In both places evaluated the ecologic indices were low, but a few superior in Premier ($H' 0.56$; EqJ: 0.43) when compared to Eldorado ($H' 0.53$; EqJ 0.40). *Tetranychus ludeni* was eudominant in both cultivars and *P. ulmi* and *A. fockeui* were dominant only in Venâncio Aires.

In Roca Sales, constant species was not observed and accessory only *Brevipalpus phoenicis* (GEIJSKES, 1939), *T. ludeni* and *T. aripo*. All other species (17 species) were accidentals (Table 1). Greater abundance was observed in December and January and bigger amount in April, with 10 species and December and March, with nine species. Whereas, in Venâncio Aires, *T. ludeni* and *P. ulmi* were constants and *A. fockeui*, Oribatida and *Tydeus* sp. accessories. Sixteen species were accidentals. Greater abundance was observed in November and December whereas greater richness in December and January with 12 and 13 species, respectively. In both orchards weren't found mites in buds.

Prunus persica showed bigger amount with 14 species, followed by *Lantana camara* L. with ten species and *Synedrella nodiflora* Gaertn. with eight species. In both cultivars, fifteen associated plants did not show mites (Table 2).

In both areas, largest population of *T. ludeni* were observed in November and December as much on peach leaves as on plants associated. In Venâncio Aires were 635 specimens and in Roca Sales, only

192 specimens. *Typhlodromalus aripo*, present only in associated plants was more abundant in Venâncio Aires (14) than in Roca Sales (8). *Phytoseiulus macropilis* was the most common predator on peach plants, mainly in Venâncio Aires. The main species did not show preference among apical, median and basal peach leaves. The frequency of *T. ludeni*, in Roca Sales, was higher on associated plants among January, March and April. Differently, in Venâncio Aires, was higher on peach plants from October to May.

The population fluctuation was different in counties evaluated. In Roca Sales, *T. ludeni* stand up higher population in December and January, with population pick in January when achieved 0.65 mite/leaf (Figure 2A). In this time phytoseiids population were high and kept this level till April. In December and January the predator species was linked to *T. ludeni*. However, between February and April other food resources were utilized, because *T. ludeni* was absent. The high population period of *T. ludeni* was preceded by low precipitations and relative humidity (Figure 2C). These factors plus the leaves peach ripening may have influenced the rising of this herbivorous mite.

Tetranychus ludeni, in Venâncio Aires, had the population pick in December with two mites/leaf as *P. ulmi* was present from November to May, with population outbreak on November and April (Figure 2B). In December when increased the phytoseiid population, decreased the population of tetranychids mites. All the same predator species were observed from August to January lacking tetranychids in this time.

DISCUSSION

The mite fauna associated to peach culture and the ecologic indices were similar in both environments. However, the frequency and ecologic niche of mites were different in the evaluated areas because the mite fauna showed difference between the areas and this difference occurred probably by farmers distinct management. In Venâncio Aires property the peach orchards is localized nearby tobacco crop and its management may caused negative impact over predator mites benefiting the herbivorous population mite. Besides, it is important to consider that the high mite populations can be linked to climate factors, because the high populations in both counties were preceded for a time with low precipitation and relative humidity.

Tetranychus ludeni was the keystone species because used as resource others species in both environments. It was more frequently with outbreak

population in December in both counties available. This species and *P. ulmi* did not show preference by extract plant differently observed by Moraes and Flechtmann (2008) in cotton crop, where *T. ludeni* preferred apical and median leaves of the plant. In Europe, *P. ulmi* is considered an economic importance to apple culture and their attacks are particularly dangerous in the begging of the spring and at the end of the summer. In spring, can cause leaves fall, harming flowers and bud development, while in the end of the summer, high population can bring leaves bronzing and affect the quality of fruit (SCHRUFT, 1985). According to Ferla and Botton (2008), in grapevine, *P. ulmi* cause bronzing with red patches on adaxial face of leaves. Differently, *Mononychellus planki* it's present only in associated plants, already has been found in soybean in the state of Rio Grande do Sul (GUEDES et al., 2004; ROGGIA et al., 2008), where their populations seem be increasing in recent years (MORAES et al., 2006).

Iolinidae and Phytoseiidae was the most common predator mites associated to herbivorous mite's population on peach plants and associated plants. *Typhlodromalus aripo*, the most common

predator, was also more common on associated plants to strawberry crop in state of Rio Grande do Sul (FERLA et al., 2007) and commonly associated to *Mononychellus tananjoa* (Bondar 1938) in cassava culture in northeast of Brazil (MORAES et al., 1990). Also is reported in others cultures and associated plants (MORAES; McMURTRY, 1983; MORAES et al., 1990; NORONHA et al., 1997).

High predator diversity was observed on associated plants and many also on peach plants, indicating the existence of species mobility in environment as reported by Altieri et al., (2003). The environmental heterogeneity increasing in monoculture system can be an alternative to pest management, because change the microclimate, provides trap plants, physic fence to herbivorous and reservoir of predators, can decrease the species-pest dominance (DAUD; FERES, 2005). Studies show that the environmental heterogeneity is a benefit factor to control the abundance of dominant phythophagous (ALTIERI et al., 2003). With that, it is suggested that the associated plants be kept in peach orchards, once was observed great diversity of predator species and they can migrate to peach plants when in herbivorous mites presence.

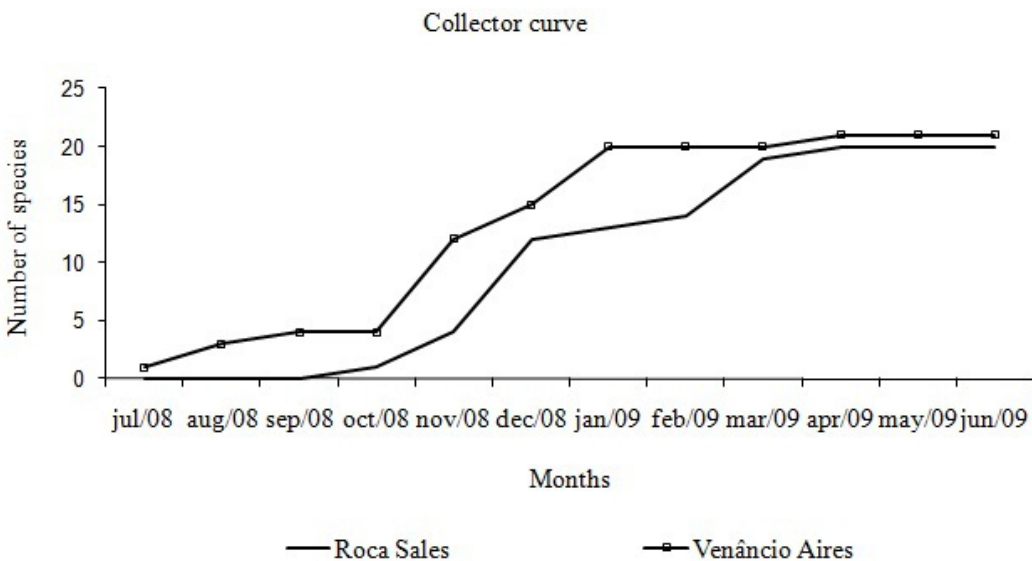


FIGURE 1 - Collector curve showing the sampling effort realized from July 2008 to June 2009, in Roca Sales and Venâncio Aires counties.

TABLE 1- Abundance of predator and phytophagous mites collected on peach leaves and plant associated. Period July 2008 to June 2009, in Roca Sales and Venancio Aires countries, Brazil.

Family	Morpho-species or species	Venâncio Aires			Roca Sales		
		Eldorado		Dominance	Premier		Dominance
		Total Freq. (%)			Total Freq. (%)		
Acaridae	<i>Caloglyphus</i> sp.				13	4.94	Subdominant
Cheyletidae	<i>Cheletomimus</i> (<i>Hemicheyletia</i>) <i>wellsi</i>				1	0.38	Rare
Cunaxidae	<i>Armascirus</i> sp.				2	0.76	Rare
	<i>Cunaxoides</i> sp.				1	0.38	Rare
Eriophyidae	<i>Aculus fockuei</i>	45	5.22	Dominant			
Iolinidae	<i>Pronematus anconai</i>	3	0.34	Rare	1	0.38	Rare
	<i>Pronematus</i> sp.	2	0.23	Rare	1	0.38	Rare
Oribatida	Oribatida	14	1.62	Eventual			
Phytoseiidae	<i>Typhlodromips mangleae</i>				9	3.42	Subdominant
	<i>Amblydromalus manihoti</i>				2	0.76	Rare
	<i>Euseius concordis</i>				5	1.9	Eventual
	<i>Euseius ho</i>	3	0.34	Rare	1	0.38	Rare
	<i>Neoseiulus californicus</i>	1	0.11	Rare			
	<i>Phytoseiulus macropilis</i>	7	0.81	Rare	3	1.14	Eventual
	<i>Proprioseiopsis dominigos</i>	2	0.23	Rare	5	1.9	Eventual
	<i>Typhlodromalus aripo</i>	14	1.62	Eventual	8	3.04	Subdominant
Pyemotidae	<i>Pygmephorus</i> sp.	1	0.11	Rare			
Stigmaeidae	<i>Agistemus braziliensis</i>	1	0.11	Rare			
	<i>Agistemus floridanus</i>	5	0.58	Rare	2	0.76	Rare
Tarsonemidae	<i>Fungitarsonemus</i> sp.	19	2.2	Subdominant	3	1.14	Eventual
	<i>Fungitarsonemus</i> sp.1	8	0.92	Rare			
	<i>Tarsonemus</i> sp.	1	0.11	Rare	3	1.14	Eventual
Tenuipalpidae	<i>Brevipalpus phoenicis</i>				4	1.52	Eventual
Tetranychidae	<i>Mononychellus planki</i>	24	2.78	Subdominant			
	<i>Panonychus ulmi</i>	44	5.11	Dominant			
	<i>Tetranychus ludeni</i>	635	73.75	Eudominant	192	73	Eudominant
Tydeidae	<i>Lorryia formosa</i>	14	1.62	Eventual			
	<i>Tydeus</i> sp.	12	1.39	Eventual	5	1.9	Eventual
Winterschmidtidae	<i>Czenpinskia</i> sp.	6	0.69	Rare	2	0.76	Rare
Abundance		861			263		
Richness		21			20		

TABLE 2 – Mites collected on associated plants and on peach leaves in Rio Grande do Sul. Period July 2008 to June 2009, in Roca Sales (Premier) and Venâncio Aires (Eldorado) counties.

Family	Plants species	Associated mites	VA	RS
			E	P
Asteraceae	<i>Artemisia</i> sp.	-	-	-
	<i>Galinsoga parviflora</i>	-	-	-
	<i>Sonchus oleraceus</i>	-	-	-
	<i>Erechites valerianaefolia</i>	-	-	-
	<i>Blainvillea biaristata</i>	-	-	-
	<i>Ageratum conyzoides</i>	-	-	-
	<i>Sonchus</i> sp.	-	-	-
	<i>Pterocaulon lanatum</i>	-	-	-
	<i>Pterocaulon virgatum</i>	<i>Amblydromalus manihoti</i>	-	1
		<i>Euseius concordis</i>	-	1
		<i>Tetranychus ludeni</i>	-	3
		<i>Cheletomimus (Hemicheyletia) wellsii</i>	-	1
		Oribatida	4	-
		<i>Proprioseiopsis dominigos</i>	1	-
		<i>Typhlodromalus aripo</i>	6	-
		<i>Hypochoeris radicata</i>	-	-
	Compositae	<i>Ambrosia tenuifolia</i>	<i>Typhlodromalus aripo</i>	6
<i>Taraxacum officinale</i>		Oribatida	2	-
		<i>Tydeus</i> sp.	11	-
<i>Senecio</i> sp.		Oribatida	1	-
<i>Conyza canadensis</i>		<i>Tetranychus ludeni</i>	20	-
<i>Solidago chilensis</i>		Oribatida	1	-
		<i>Phytoseiulus macropilis</i>	2	-
		<i>Tetranychus ludeni</i>	7	-
		Oribatida	1	-
		<i>Tetranychus ludeni</i>	1	-
<i>Bidens pilosa</i>		<i>Brevipalpus phoenicis</i>	-	2
		<i>Czenpinskia</i> sp.	2	-
		<i>Neoseiulus californicus</i>	1	-
		<i>Phytoseiulus macropilis</i>	-	1
		<i>Pronematus anconai</i>	1	-
		<i>Tetranychus ludeni</i>	2	47
		<i>Typhlodromalus aripo</i>	-	2
		<i>Agistemus floridanus</i>	2	-
		<i>Amblydromalus manihoti</i>	-	1
		<i>Czenpinskia</i> sp.	1	-
	Oribatida	5	-	
	<i>Proprioseiopsis dominigos</i>	1	-	
	<i>Tetranychus ludeni</i>	-	43	
	<i>Typhlodromalus aripo</i>	-	3	
	<i>Tarsonemus</i> sp.	-	1	
Cucurbitaceae	<i>Cayaponia podantha</i>	<i>Aculus fockeui</i>	1	-
		<i>Czenpinskia</i> sp.	1	-
		<i>Tarsonemus</i> sp.	1	-
Convolvulceae	<i>Ipomoea nil</i>	<i>Phytoseiulus macropilis</i>	-	1
		<i>Tetranychus ludeni</i>	-	36
	<i>Ipomoea</i> sp.	<i>Proprioseiopsis dominigos</i>	-	2
	<i>Typhlodromalus aripo</i>	-	1	
Labiatae	<i>Leonurus sibiricus</i>	<i>Brevipalpus phoenicis</i>	-	1

continuação

continua

Loganiaceae	<i>Buddleja brasiliensis</i>	<i>Agistemus floridanus</i>	-	1
		<i>Cunaxoides</i> sp.	-	1
Malvaceae	<i>Sida santaremnensis</i>	<i>Brevipalpus phoenicis</i>	-	1
		<i>Caloglyphus</i> sp.	-	1
		<i>Mononychellus planki</i>	4	-
		<i>Pygmephorus</i> sp.	1	-
		<i>Tetranychus ludeni</i>	9	-
		<i>Tydeus</i> sp.	-	1
	<i>Sida urens</i>	-	-	-
	<i>Sida rhombifolia</i>	-	-	-
	<i>Sida spinosa</i>	<i>Mononychellus planki</i>	20	-
Oxalidaceae	<i>Oxalis corniculata</i>	-	-	-
Poaceae	<i>Paspalum dilatatum</i>	-	-	-
	<i>Brachiaria brizantha</i>	-	-	-
Rosaceae	<i>Prunus persica</i>	<i>Aculus fockeui</i>	44	-
		<i>Agistemus brasiliensis</i>	1	-
		<i>Agistemus floridanus</i>	3	1
		<i>Caloglyphus</i> sp.	-	12
		<i>Euseius ho</i>	3	1
		<i>Fungitarsonemus</i> sp.	19	3
		<i>Fungitarsonemus</i> sp.1	8	
		<i>Lorrya formosa</i>	14	-
		<i>Panonychus ulmi</i>	44	-
		<i>Phytoseiulus macropilis</i>	3	7
		<i>Pronematus anconai</i>	-	1
		<i>Tarsonemus</i> sp.	-	2
		<i>Tetranychus ludeni</i>	594	57
		<i>Tydeus</i> sp.	1	4
Sapindaceae	<i>Cardiospermum halicacabum</i>	-	-	-
Thelypteridaceae	<i>Thelypteris dentata</i>	-	-	-
Verbenaceae	<i>Lantana camara</i>	<i>Armascirus</i> sp.	-	2
		<i>Cunaxoides</i> sp.	-	1
		<i>Czenpinskia</i> sp.	2	2
		<i>Euseius concordis</i>	-	4
		<i>Phytoseiulus macropilis</i>	2	-
		<i>Pronematus anconai</i>	3	1
		<i>Proprioseiopsis dominigos</i>	-	3
		<i>Tetranychus ludeni</i>	2	6
		<i>Typhlodromalus aripo</i>	-	2
		<i>Typhlodromips mangleae</i>	-	9
Total			861	263

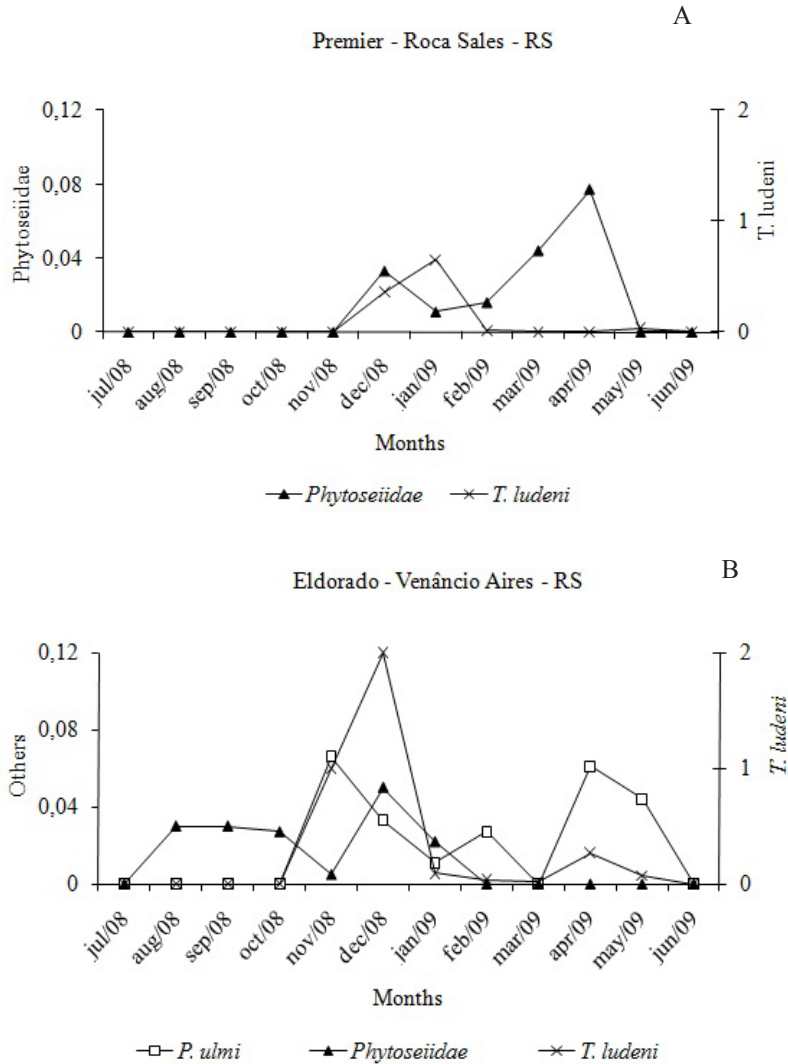


FIGURE 2 - A-B Mite's fluctuation population on peach orchards, in Roca Sales (Premier) and Venâncio Aires (Eldorado) counties; C - Climate Parameters of UNIVATES University Center Meteorological Station, Lajeado, from July 2008 to June 2009, state of Rio Grande do Sul, Brazil.

CONCLUSIONS

1-*Tetranychus ludeni*, *Panonychus ulmi* and *Mononychellus planki* were the phytophagous mites more abundant. *Typhlodromalus aripo* and *Phytoseiulus macropilis* are the most common predator mites.

2-*Tetranychus ludeni* is the most important phytophagous mites in peach culture in Taquari Valley (Roca Sales and Venâncio Aires - RS) with outbreak population in November, December and January.

3-High predator diversity was observed on associated plants and on peach plants, indicating the existence of species mobility in peach orchard.

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