Entomol.rom., 5: 75-88, 2000 ISSN 1224 - 2594

Ecological indices of thrips populations from the Gârbova Massive (Insecta: Thysanoptera)

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Rezumat

Indicii ecologici ai populaţiilor de thripşi din Masivul Gârbova (Insecta: Thysanoptera)

Lucrarea prezintă locul şi rolul asociaţiilor de thripşi în cadrul biocenozelor praticole din Masivul Gârbova, într-o abordare sistematică a cercetărilor. Au fost studiaţi următorii indici structurali ai populatiilor de thripşi: prezenţa specifică, abundenţa numerică şi relativă, dominanţa, constanţa şi indicele de semnificaţie ecologică, în interdependenţă cu factorii abiotici staţionali.

Abstract

The work presents the place and the role of the thrips associations in the praticolous biocoenosis from the Gârbova Massive, in a systemic landing of the researches. The values of some structural indices of thrips populations (the specific presence, numerical and relative abundance, dominance, constance, index of ecological significance) were studied in relation with the abiotical factors.

Keywords: Thysanoptera, structural indices.

OETTINGEN (1954) and KNECHTEL (1956, 1963) have realized phenological studies on the thrips populations in Sweden and Romania, in the meadow ecosystems, during one year.

Materials and Methods

The thrips populations were studied during 3 years in 6 sites, all-secondary meadows, of 1 ha, in the Gârbova Massive, differentiated altitudinal, through typical vegetal associations and soil.

Şetu site: 800 m altitude, S-W exhibition, the slope small inclined, brown eubasic meadow soil, characterized by the association *Festuco rubrae-Agrostetum capillaris* HORV., 1951, in fir- beech zone.

We have done the researches and in the following sites on Bogdan Valley:

Site 1: 900 m altitude, S exhibition, the slope 10°-15°, brown acid forest soil, *Festuco rubrae-Agrostetum capillaris* Horv. 1951 association, in beech under zone.

Site 2: 1050 m altitude, S-W exhibition, the slope 10°-15°, brown acid forest soil, the vegetal association of *Festuco rubrae-Agrostetum capillaris* HORV., 1951, in beech under zone.

Site 3: "Hut", 1200 m altitude, S-E exhibition, the slope 10°, brown acid meadow soil, *Festuco rubrae-Agrostetum capillaris* HORV., 1951 vegetal association, in beech under zone.

Site 4: 1400 m altitude, S exhibition, the slope 15°- 20°, podzol soil, the association *Scorzonero roseae-Festucetum nigricantis* (PUŞCARU & all. 1956) COLDEA 1987, in spruce-fir under zone.

Site 5: "Plateau" 1500 m altitude, W exhibition, the slope 25°-30°, podzol humico-silicatic meadow soil, *Violo declinatae-Nardetum* SIMON, 1966. association, in spruce-fire under zone.

All the sites are unmoving and ungrazing meadows.

In the Şetu site there had been functioning a meteorological station, during 3 years (tab. 1, fig. 1).

The working method was of the ecological stationary, delimitated on the surface of 1 ha.

In these sites, we have utilised two established methods, recognized on international level: sweep net method and shake of blooming plants method; the

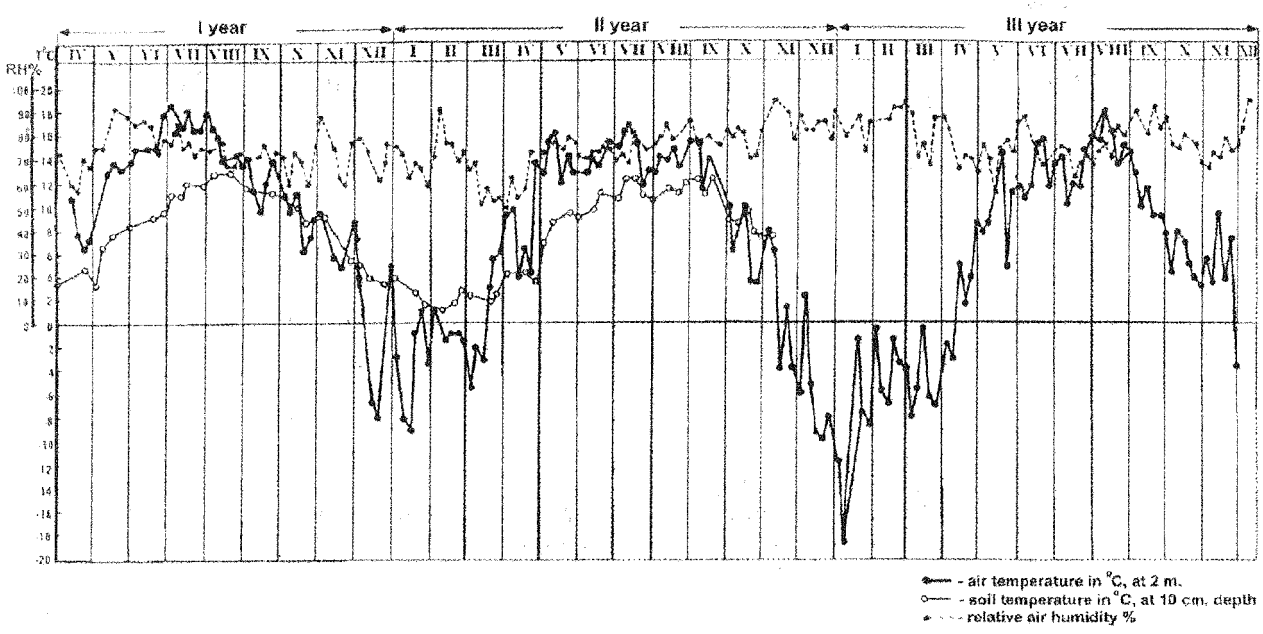

Fig. 1 The variation of the physical factors in the Şeţu site from the Gârbova Massive

Table 1

The general climatic values for the altitudinal intervals of the investigated sites from the Gârbova Massive

Altitude	Annual average temperatures °C			Rainfall
	Positive		Current	Annual amount
m	Amount	Current	General	in mm
800	**2630**	**6,2**	**7,1**	**860**
900	**2470**	**5,7**	**6,6**	**900**
1000	**2310**	**5,2**	**6,0**	**950**
1100	**2190**	**4,8**	**5,5**	**1010**
1200	**2060**	**4,4**	**5,0**	**1050**
1300	**1935**	**4,0**	**4,5**	**1080**
1400	**1810**	**3,6**	**4,0**	**1125**
1500	**1715**	**3,3**	**3,5**	**1145**
1600	**1620**	**3,0**	**2,9**	**1175**
Average 1200	2080	4,5	5,0	1033
Gradients/100m	112	0,35	0,53	35

Table 2

The number of species and the number of individuals of a thrips fauna from the Gârbova Massive

Site	Sweep net method							Shake method						
	year I		year II		year III			year I		year II		year III		
	sp. no	ind. no	sp. no	ind. no	sp. no	ind. no	Σ ind. no	sp. no	ind. no	sp. no	ind. no	sp. no	ind. no	Σ ind. no
Şeţu	38	464	33	263	36	373	1100	31	903	33	1364	31	911	3178
1	35	494	29	201	32	329	1024	29	831	29	662	30	592	2085
2	31	474	32	264	33	312	1050	23	638	29	981	25	533	2152
3	39	522	41	669	41	589	1780	26	590	35	1196	34	1041	2827
4	31	811	30	234	30	373	1418	30	538	33	939	28	371	1848
5	32	506	30	258	29	314	1078	31	477	21	281	26	331	1089
						Total =	**7450**						**Total =**	**13179**

Numerical and relative abundance, dominance, constance, index of ecological significance of thrips populations

(sweep net method, I, II, III year)

fam	species	I year nr.	%	Site Setu cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	3	0.65	1	3.33	1	0.02	1
1a	Aeolothrips fasciatus	5	1.08	2	6.67	1	0.07	1
1a	Aeolothrips intermedius	35	7.54	3	50.00	2	3.77	3
1a	Melanthrips fuscus	2	0.43	1	3.33	1	0.01	1
1a	Melanthrips pallidior	38	8.19	3	16.67	1	1.37	3
1a	Rhipidothrips gratiosus	1	0.22	1	3.33	1	0.01	1
2t	Anaphothrips obscurus	1	0.22	1	3.33	1	0.01	1
2t	Aptinothrips elegans	14	3.02	2	6.67	1	0.20	2
2t	Aptinothrips rufus	15	3.23	2	26.67	2	0.86	2
2t	Aptinothrips stylifer	37	7.97	3	30.00	2	2.39	3
2t	Chirothrips manicatus	125	26.94	4	20.00	1	5.39	4
2t	Firmothrips firmus	4	0.86	1	3.33	1	0.03	1
2t	Frankliniella intonsa	6	1.29	2	16.67	1	0.22	2
2t	Kakothrips robustus	3	0.65	1	3.33	1	0.02	1
2t	Limothrips denticornis	1	0.22	1	3.33	1	0.01	1
2t	Neohydatothrips abnormis	2	0.43	1	3.33	1	0.01	1
2t	Odontothrips biuncus	1	0.22	1	3.33	1	0.01	1
2t	Odontothrips loti	5	1.08	2	13.33	1	0.14	2
2t	Sericothrips bicornis	7	1.51	2	10.00	1	0.15	2
2t	Taeniothrips picipes	18	3.88	2	16.67	1	0.65	2
2t	Tenothrips frici	1	0.22	1	3.33	1	0.01	1
2t	Thrips atratus	7	1.51	2	16.67	1	0.25	2
2t	Thrips montanus	26	5.60	3	20.00	1	1.12	3
2t	Thrips pelikani	4	0.86	1	3.33	1	0.03	1
2t	Thrips physapus	24	5.17	3	33.33	2	1.72	3
2t	Thrips tabaci	7	1.51	2	23.33	1	0.35	2
2t	Thrips trehernei	2	0.43	1	3.33	1	0.01	1
2t	Thrips validus	6	1.29	2	10.00	1	0.13	2
3p	Bolothrips bicolor	1	0.22	1	3.33	1	0.01	1
3p	Haplothrips acanthoscelis	2	0.43	1	3.33	1	0.01	1
3p	Haplothrips aculeatus	24	5.17	3	20.00	1	1.03	3
3p	Haplothrips distinguendus	8	1.72	2	16.67	1	0.29	2
3p	Haplothrips kurdjumovi	1	0.22	1	3.33	1	0.01	1
3p	Haplothrips leucanthemi	8	1.72	2	13.33	1	0.23	2
3p	Haplothrips niger	7	1.51	2	13.33	1	0.20	2
3p	Haplothrips reuteri	3	0.65	1	3.33	1	0.02	1
3p	Haplothrips setiger	3	0.65	1	3.33	1	0.02	1
3p	Haplothrips tritici	7	1.51	2	10.00	1	0.15	2
	Total	464	100					

fam	species	I year Site 1 nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	1	0.20	1	3.33	1	0.01	1
1a	Aeolothrips fasciatus	8	1.62	2	16.67	1	0.27	2
1a	Aeolothrips intermedius	17	3.44	2	30.00	2	1.03	2
1a	Melanthrips fuscus	7	1.42	2	6.67	1	0.09	1
1a	Melanthrips pallidior	67	13.56	4	23.33	1	3.16	3
2t	Aptinothrips rufus	7	1.42	2	6.67	1	0.09	1
2t	Aptinothrips stylifer	7	1.42	2	6.67	1	0.09	1
2t	Chirothrips aculeatus	10	2.02	2	6.67	1	0.14	1
2t	Chirothrips manicatus	154	31.17	5	66.67	3	20.78	5
2t	Firmothrips firmus	3	0.61	1	6.67	1	0.04	1
2t	Frankliniella intonsa	7	1.42	2	16.67	1	0.24	2
2t	Limothrips denticornis	4	0.81	1	10.00	1	0.08	1
2t	Limothrips schmutzi	1	0.20	1	3.33	1	0.01	1
2t	Neohydatothrips abnormis	1	0.20	1	3.33	1	0.01	1
2t	Odontothrips loti	47	9.51	3	30.00	2	2.85	3
2t	Odontothrips phaleratus	2	0.40	1	3.33	1	0.01	1
2t	Sericothrips abnormis	1	0.20	1	3.33	1	0.01	1
2t	Taeniothrips inconsequens	2	0.40	1	3.33	1	0.01	1
2t	Taeniothrips picipes	16	3.24	2	26.67	2	0.86	2
2t	Tenothrips frici	16	3.24	2	10.00	1	0.32	2
2t	Thrips atratus	6	1.21	2	13.33	1	0.16	2
2t	Thrips montanus	30	6.07	3	13.33	1	0.81	2
2t	Thrips pelikani	2	0.40	1	6.67	1	0.03	1
2t	Thrips physapus	8	1.62	2	20.00	1	0.32	2
2t	Thrips tabaci	9	1.82	2	16.67	1	0.30	2
2t	Thrips trehernei	3	0.61	1	3.33	1	0.02	1
2t	Thrips vulgatissimus	3	0.61	1	3.33	1	0.02	1
3p	Haplothrips alpester	17	3.44	2	10.00	1	0.34	2
3p	Haplothrips angusticornis	4	0.81	1	10.00	1	0.08	1
3p	Haplothrips distinguendus	11	2.23	2	20.00	1	0.45	2
3p	Haplothrips leucanthemi	4	0.81	1	6.67	1	0.05	1
3p	Haplothrips niger	7	1.42	2	23.33	1	0.33	2
3p	Haplothrips reuteri	4	0.81	1	6.67	1	0.05	1
3p	Haplothrips tritici	7	1.42	2	10.00	1	0.14	2
3p	Phlaeothrips pilichianus	1	0.20	1	3.33	1	0.01	1
	Total	494	100					

1a = Family Aeolothripidae
2t = Family Thripidae
3p = Family Phlaeothripidae

Site 2

fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	1	0.21	1	3.33	1	0.01	1
1a	Aeolothrips fasciatus	9	1.90	2	23.33	1	0.44	2
1a	Aeolothrips intermedius	20	4.22	2	40.00	2	1.69	3
1a	Melanthrips fuscus	4	0.84	1	3.33	1	0.03	1
1a	Melanthrips pallidior	31	6.54	3	20.00	1	1.31	3
2t	Aptinothrips stylifer	5	1.05	2	13.33	1	0.14	2
2t	Chirothrips manicatus	147	31.01	5	73.33	3	22.74	5
2t	Frankliniella intonsa	7	1.48	2	10.00	1	0.15	2
2t	Limothrips denticornis	2	0.42	1	6.67	1	0.03	1
2t	Odontothrips biuncus	3	0.63	1	30.00	2	0.19	2
2t	Odontothrips loti	59	12.45	4	33.33	2	4.15	3
2t	Taeniothrips picipes	23	4.85	2	26.67	2	1.29	3
2t	Tenothrips frici	3	0.63	1	10.00	1	0.06	1
2t	Thrips atratus	30	6.33	3	6.67	1	0.42	2
2t	Thrips flavus	1	0.21	1	3.33	1	0.01	1
2t	Thrips pelikani	5	1.05	2	6.67	1	0.07	1
2t	Thrips physapus	14	2.95	2	16.67	1	0.49	2
2t	Thrips tabaci	7	1.48	2	16.67	1	0.25	2
2t	Thrips trehernei	9	1.90	2	6.67	1	0.13	2
2t	Thrips validus	1	0.21	1	3.33	1	0.01	1
2t	Thrips vulgatissimus	1	0.21	1	3.33	1	0.01	1
3p	Haplothrips acanthoscelis	1	0.21	1	3.33	1	0.01	1
3p	Haplothrips alpester	43	9.07	3	20.00	1	1.81	3
3p	Haplothrips angusticornis	8	1.69	2	10.00	1	0.17	2
3p	Haplothrips distinguendus	3	0.63	1	10.00	1	0.06	1
3p	Haplothrips leucanthemi	1	0.21	1	3.33	1	0.01	1
3p	Haplothrips niger	16	3.38	2	20.00	1	0.68	2
3p	Haplothrips reuteri	3	0.63	1	3.33	1	0.02	1
3p	Haplothrips setiger	1	0.21	1	3.33	1	0.01	1
3p	Haplothrips tritici	15	3.16	2	10.00	1	0.32	2
3p	Hoplandrothrips bidens	1	0.21	1	3.33	1	0.01	1
	Total	474	100.00					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

Site 3

fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	3	0.57	1	3.33	1	0.02	1
1a	Aeolothrips fasciatus	1	0.19	1	3.33	1	0.01	1
1a	Aeolothrips intermedius	31	5.94	3	46.67	2	2.77	3
1a	Melanthrips fuscus	6	1.15	2	3.33	1	0.04	1
1a	Melanthrips pallidior	11	2.11	2	20.00	1	0.42	2
2t	Anaphothrips obscurus	1	0.19	1	3.33	1	0.01	1
2t	Aptinothrips rufus	9	1.72	2	13.33	1	0.23	2
2t	Aptinothrips stylifer	1	0.19	1	3.33	1	0.01	1
2t	Chirothrips manicatus	75	14.37	4	70.00	3	10.06	5
2t	Firmothrips firmus	22	4.21	2	10.00	1	0.42	2
2t	Frankliniella intonsa	11	2.11	2	20.00	1	0.42	2
2t	Frankliniella tenuicornis	1	0.19	1	3.33	1	0.01	1
2t	Limothrips denticornis	4	0.77	1	6.67	1	0.05	1
2t	Limothrips schmutzi	2	0.38	1	6.67	1	0.03	1
2t	Odontothrips loti	8	1.53	2	13.33	1	0.20	2
2t	Odontothrips phaleratus	1	0.19	1	3.33	1	0.01	1
2t	Taeniothrips picipes	30	5.75	3	16.67	1	0.96	2
2t	Tenothrips frici	1	0.19	1	3.33	1	0.01	1
2t	Thrips atratus	8	1.53	2	16.67	1	0.26	2
2t	Thrips flavus	1	0.19	1	3.33	1	0.01	1
2t	Thrips major	1	0.19	1	3.33	1	0.01	1
2t	Thrips montanus	32	6.13	3	20.00	1	1.23	3
2t	Thrips montivagus	2	0.38	1	6.67	1	0.03	1
2t	Thrips pelikani	3	0.57	1	6.67	1	0.04	1
2t	Thrips physapus	12	2.30	2	6.67	1	0.15	2
2t	Thrips tabaci	5	0.96	1	10.00	1	0.10	2
2t	Thrips trehernei	2	0.38	1	6.67	1	0.03	1
2t	Thrips validus	4	0.77	1	6.67	1	0.05	1
2t	Thrips vulgatissimus	9	1.72	2	3.33	1	0.06	1
3p	Haplothrips acanthoscelis	2	0.38	1	6.67	1	0.03	1
3p	Haplothrips aculeatus	17	3.26	2	10.00	1	0.33	2
3p	Haplothrips alpester	98	18.77	4	36.67	2	6.88	4
3p	Haplothrips angusticornis	8	1.53	2	20.00	1	0.31	2
3p	Haplothrips distinguendus	4	0.77	1	10.00	1	0.08	1
3p	Haplothrips leucanthemi	25	4.79	2	10.00	1	0.48	2
3p	Haplothrips niger	61	11.69	4	36.67	2	4.29	3
3p	Haplothrips reuteri	6	1.15	2	10.00	1	0.11	2
3p	Haplothrips tritici	3	0.57	1	10.00	1	0.06	1
3p	Liothrips austriacus	1	0.19	1	3.33	1	0.01	1
	Total	522	100.00					

Site 4

fam	species	nr.	%	cl.D	const	cl.	W	cl.
1a	Aeolothrips intermedius	20	2.47	2	40.00	2	0.99	2
1a	Melanthrips fuscus	2	0.25	1	3.33	1	0.01	1
1a	Melanthrips pallidior	3	0.37	1	6.67	1	0.02	1
2t	Aptinothrips stylifer	1	0.12	1	3.33	1	0.00	1
2t	Chirothrips aculeatus	2	0.25	1	3.33	1	0.01	1
2t	Chirothrips manicatus	575	70.90	5	66.67	3	47.27	5
2t	Firmothrips firmus	4	0.49	1	6.67	1	0.03	1
2t	Frankliniella intonsa	4	0.49	1	6.67	1	0.03	1
2t	Kakothrips robustus	1	0.12	1	3.33	1	0.00	1
2t	Limothrips denticornis	1	0.12	1	3.33	1	0.00	1
2t	Odontothrips confusus	1	0.12	1	3.33	1	0.00	1
2t	Odontothrips loti	1	0.12	1	3.33	1	0.00	1
2t	Oxythrips bicolor	4	0.49	1	6.67	1	0.03	1
2t	Taeniothrips inconsequens	10	1.23	2	6.67	1	0.08	1
2t	Taeniothrips picipes	25	3.08	2	13.33	1	0.41	2
2t	Tenothrips frici	1	0.12	1	3.33	1	0.00	1
2t	Thrips minutissimus	2	0.25	1	6.67	1	0.02	1
2t	Thrips montanus	5	0.62	1	6.67	1	0.04	1
2t	Thrips pelikani	1	0.12	1	3.33	1	0.00	1
2t	Thrips physapus	5	0.62	1	13.33	1	0.08	1
2t	Thrips tabaci	18	2.22	2	13.33	1	0.30	2
2t	Thrips trybomi	1	0.12	1	3.33	1	0.00	1
2t	Thrips validus	3	0.37	1	6.67	1	0.02	1
2t	Thrips vulgatissimus	1	0.12	1	3.33	1	0.00	1
3p	Haplothrips acanthoscelis	1	0.12	1	3.33	1	0.00	1
3p	Haplothrips aculeatus	1	0.12	1	3.33	1	0.00	1
3p	Haplothrips alpester	1	0.12	1	3.33	1	0.00	1
3p	Haplothrips angusticornis	65	8.01	3	10.00	1	0.80	2
3p	Haplothrips leucanthemi	3	0.37	1	3.33	1	0.01	1
3p	Haplothrips niger	47	5.80	3	13.33	1	0.77	2
3p	Haplothrips reuteri	2	0.25	1	3.33	1	0.01	1
	Total	**811**	**100.00**					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

Site 5

fam	species	nr.	%	cl.D	const	cl.	W	cl.
1a	Aeolothrips fasciatus	3	0.59	1	10.00	1	0.06	1
1a	Aeolothrips intermedius	25	4.94	2	43.33	2	2.14	3
1a	Melanthrips pallidior	4	0.79	1	6.67	1	0.05	1
2t	Anaphothrips euphorbiae	1	0.20	1	3.33	1	0.01	1
2t	Anaphothrips obscurus	2	0.40	1	6.67	1	0.03	1
2t	Aptinothrips rufus	25	4.94	2	20.00	1	0.99	2
2t	Aptinothrips stylifer	169	33.40	5	20.00	1	6.68	4
2t	Chirothrips manicatus	188	37.15	5	63.33	3	23.53	5
2t	Frankliniella intonsa	16	3.16	2	20.00	1	0.63	2
2t	Limothrips denticornis	2	0.40	1	3.33	1	0.01	1
2t	Odontothrips loti	5	0.99	1	10.00	1	0.10	2
2t	Taeniothrips picipes	2	0.40	1	6.67	1	0.03	1
2t	Thrips atratus	2	0.40	1	6.67	1	0.03	1
2t	Thrips major	1	0.20	1	3.33	1	0.01	1
2t	Thrips montanus	2	0.40	1	6.67	1	0.03	1
2t	Thrips physapus	5	0.99	1	13.33	1	0.13	2
2t	Thrips tabaci	2	0.40	1	6.67	1	0.03	1
2t	Thrips trehernei	1	0.20	1	3.33	1	0.01	1
2t	Thrips validus	3	0.59	1	3.33	1	0.02	1
2t	Thrips vulgatissimus	1	0.20	1	3.33	1	0.01	1
3p	Haplothrips acanthoscelis	9	1.78	2	23.33	2	0.41	2
3p	Haplothrips aculeatus	7	1.38	2	16.67	1	0.23	2
3p	Haplothrips alpester	4	0.79	1	10.00	1	0.08	1
3p	Haplothrips angusticornis	2	0.40	1	6.67	1	0.03	1
3p	Haplothrips distinguendus	4	0.79	1	6.67	1	0.05	1
3p	Haplothrips kurdjumovi	1	0.20	1	3.33	1	0.01	1
3p	Haplothrips leucanthemi	2	0.40	1	3.33	1	0.01	1
3p	Haplothrips niger	6	1.19	2	13.33	1	0.16	2
3p	Haplothrips reuteri	6	1.19	2	13.33	1	0.16	2
3p	Haplothrips setiger	1	0.20	1	3.33	1	0.01	1
3p	Haplothrips tritici	4	0.79	1	6.67	1	0.05	1
3p	Phlaeothrips coriaceus	1	0.20	1	3.33	1	0.01	1
	Total	**506**	**100.00**					

Site Setu

fam	species	nr.	%	cl.D	const	cl.	W	cl.
1a	Aeolothrips albicinctus	1	0.38	1	2.78	1	0.01	1
1a	Aeolothrips fasciatus	2	0.76	1	5.56	1	0.04	2
1a	Aeolothrips intermedius	10	3.80	2	16.67	1	0.63	2
1a	Melanthrips fuscus	1	0.38	1	2.78	1	0.01	1
1a	Melanthrips pallidior	1	0.38	1	2.78	1	0.01	1
2t	Aptinothrips elegans	6	2.28	2	5.56	1	0.13	2
2t	Aptinothrips rufus	15	5.70	3	13.89	1	0.79	2
2t	Aptinothrips stylifer	39	14.83	4	25.0	1	3.71	3
2t	Chirothrips manicatus	112	42.59	5	27.78	2	11.83	5
2t	Frankliniella intonsa	6	2.28	2	13.89	1	0.32	2
2t	Kakothrips robustus	1	0.38	1	2.78	1	0.01	1
2t	Mycterothrips annulicornis	1	0.38	1	2.78	1	0.01	1
2t	Odontothrips loti	10	3.80	2	11.11	1	0.42	2
2t	Prosopothrips vejdovski	1	0.38	1	2.78	1	0.01	1
2t	Sericothrips bicornis	1	0.38	1	2.78	1	0.01	1
2t	Taeniothrips picipes	2	0.76	1	2.78	1	0.02	1
2t	Thrips atratus	1	0.38	1	2.78	1	0.01	1
2t	Thrips flavus	2	0.76	1	2.78	1	0.02	1
2t	Thrips montanus	3	1.14	2	2.78	1	0.03	1
2t	Thrips montivagus	1	0.38	1	2.78	1	0.01	1
2t	Thrips pelikani	6	2.28	2	5.56	1	0.13	2
2t	Thrips physapus	13	4.94	2	16.67	1	0.82	2
2t	Thrips tabaci	2	0.76	1	2.78	1	0.02	1
3p	Bolothrips bicolor	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips acanthoscelis	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips aculeatus	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips alpester	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips angusticornis	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips leucanthemi	4	1.52	2	2.78	1	0.04	1
3p	Haplothrips niger	14	5.32	3	13.89	1	0.74	2
3p	Haplothrips reuteri	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips setiger	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips subtilissimus	1	0.38	1	2.78	1	0.01	1
	Total	**263**	**100**					

Site 1

fam	species	nr.	%	cl.D	const	cl.	W	cl.
1a	Aeolothrips ericae	1	0.50	1	2.78	1	0.01	1
1a	Aeolothrips fasciatus	3	1.49	2	5.56	1	0.08	1
1a	Aeolothrips intermedius	6	2.99	2	11.11	1	0.33	2
1a	Melanthrips pallidior	8	3.98	2	5.56	1	0.22	2
2t	Aptinothrips elegans	3	1.49	2	2.78	1	0.04	1
2t	Aptinothrips rufus	9	4.48	2	13.89	1	0.62	2
2t	Aptinothrips stylifer	12	5.97	3	11.11	1	0.66	2
2t	Chirothrips manicatus	79	39.30	5	27.8	2	10.92	5
2t	Firmothrips firmus	1	0.50	1	2.78	1	0.01	1
2t	Frankliniella intonsa	9	4.48	2	16.67	1	0.75	2
2t	Odontothrips loti	23	11.44	4	8.33	1	0.95	2
2t	Taeniothrips picipes	1	0.50	1	2.78	1	0.01	1
2t	Thrips flavus	3	1.49	2	5.56	1	0.08	1
2t	Thrips montanus	1	0.50	1	2.78	1	0.01	1
2t	Thrips montivagus	3	1.49	2	2.78	1	0.04	1
2t	Thrips pelikani	1	0.50	1	2.78	1	0.01	1
2t	Thrips physapus	4	1.99	2	5.56	1	0.11	2
2t	Thrips tabaci	7	3.48	2	8.33	1	0.29	2
2t	Thrips trehernei	2	1.00	1	5.56	1	0.06	1
2t	Thrips validus	3	1.49	2	2.78	1	0.04	1
2t	Thrips vulgatissimus	1	0.50	1	2.78	1	0.01	1
3p	Haplothrips aculeatus	1	0.50	1	2.78	1	0.01	1
3p	Haplothrips angusticornis	1	0.50	1	2.78	1	0.01	1
3p	Haplothrips distinguendus	1	0.50	1	2.78	1	0.01	1
3p	Haplothrips niger	11	5.47	3	8.33	1	0.46	2
3p	Haplothrips reuteri	2	1.00	1	5.56	1	0.06	1
3p	Haplothrips subtilissimus	1	0.50	1	2.78	1	0.01	1
3p	Haplothrips tritici	1	0.50	1	2.78	1	0.01	1
3p	Phlaeothrips pillichianus	3	1.49	2	2.77	1	0.04	1
	Total	**201**	**100.00**					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

				Site 2				
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	1	0.38	1	2.78	1	0.01	1
1a	Aeolothrips fasciatus	3	1.14	2	5.56	1	0.06	1
1a	Aeolothrips intermedius	17	6.44	3	19.44	1	1.25	2
1a	Melanthrips pallidior	14	5.30	3	5.56	1	0.29	2
2t	Anaphothrips obscurus	2	0.76	1	2.78	1	0.02	1
2t	Aptinothrips elegans	1	0.38	1	2.78	1	0.01	1
2t	Aptinothrips rufus	6	2.27	2	8.33	1	0.19	2
2t	Aptinothrips stylifer	16	6.06	3	16.67	1	1.01	2
2t	Chirothrips manicatus	99	37.50	5	27.78	2	10.42	5
2t	Firmothrips firmus	1	0.38	1	2.78	1	0.01	1
2t	Frankliniella intonsa	10	3.79	2	11.11	1	0.42	2
2t	Mycterothrips annulicornis	1	0.38	1	2.78	1	0.01	1
2t	Odontothrips biuncus	1	0.38	1	2.78	1	0.01	1
2t	Odontothrips loti	19	7.20	3	13.89	1	1.00	2
2t	Taeniothrips picipes	3	1.14	2	5.56	1	0.06	1
2t	Thrips flavus	4	1.52	2	2.78	1	0.04	1
2t	Thrips montanus	9	3.41	2	5.56	1	0.19	2
2t	Thrips montivagus	1	0.38	1	2.78	1	0.01	1
2t	Thrips pelikani	1	0.38	1	2.78	1	0.01	1
2t	Thrips physapus	7	2.65	2	11.11	1	0.29	2
2t	Thrips tabaci	2	0.76	1	5.56	1	0.04	1
2t	Thrips trehernei	1	0.38	1	2.78	1	0.01	1
2t	Thrips validus	1	0.38	1	2.78	1	0.01	1
2t	Thrips vulgatissimus	8	3.03	2	8.33	1	0.25	2
3p	Haplothrips aculeatus	6	2.27	2	5.56	1	0.13	2
3p	Haplothrips alpester	7	2.65	2	8.33	1	0.22	2
3p	Haplothrips distinguendus	2	0.76	1	2.78	1	0.02	1
3p	Haplothrips leucanthemi	12	4.55	2	8.33	1	0.38	2
3p	Haplothrips niger	5	1.89	2	5.56	1	0.11	2
3p	Haplothrips setiger	1	0.38	1	2.78	1	0.01	1
3p	Haplothrips tritici	1	0.38	1	2.78	1	0.01	1
3p	Hoplandrothrips bidens	2	0.76	1	2.78	1	0.02	1
		Total	**264**	**100**				

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

- continuation tab.3 - II year

				Site 3				
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	6	0.90	1	5.55	1	0.05	1
1a	Aeolothrips intermedius	25	3.74	2	19.44	1	0.73	2
1a	Melanthrips pallidior	2	0.30	1	2.78	1	0.01	1
2t	Anaphothrips obscurus	3	0.45	1	2.78	1	0.01	1
2t	Aptinothrips elegans	9	1.35	2	11.11	1	0.15	2
2t	Aptinothrips rufus	4	0.60	1	5.55	1	0.03	1
2t	Aptinothrips stylifer	26	3.89	2	13.88	1	0.54	2
2t	Chirothrips manicatus	66	9.87	3	25.00	1	2.47	3
2t	Firmothrips firmus	5	0.75	1	13.88	1	0.10	1
2t	Frankliniella intonsa	6	0.90	1	11.11	1	0.10	1
2t	Limothrips denticornis	2	0.30	1	2.78	1	0.01	1
2t	Limothrips schmutzi	1	0.15	1	2.78	1	0.00	1
2t	Neohydatothrips abnormis	1	0.15	1	2.78	1	0.00	1
2t	Odontothrips biuncus	3	0.45	1	2.78	1	0.01	1
2t	Odontothrips loti	16	2.39	2	11.11	1	0.27	2
2t	Odontothrips phaleratus	3	0.45	1	2.78	1	0.01	1
2t	Oxythrips bicolor	1	0.15	1	2.78	1	0.00	1
2t	Parafrankliniella verbasci	1	0.15	1	2.78	1	0.00	1
2t	Sminyothrips biuncatus	1	0.15	1	2.78	1	0.00	1
2t	Taeniothrips picipes	6	0.90	1	13.88	1	0.12	2
2t	Tenothrips frici	1	0.15	1	2.78	1	0.00	1
2t	Thrips atratus	2	0.30	1	2.78	1	0.01	1
2t	Thrips crassicornis	1	0.15	1	2.78	1	0.00	1
2t	Thrips flavus	1	0.15	1	2.78	1	0.00	1
2t	Thrips major	1	0.15	1	2.78	1	0.00	1
2t	Thrips minutissimus	1	0.15	1	2.78	1	0.00	1
2t	Thrips montanus	1	0.15	1	2.78	1	0.00	1
2t	Thrips nigropilosus	1	0.15	1	2.78	1	0.00	1
2t	Thrips physapus	8	1.20	2	13.88	1	0.17	2
2t	Thrips tabaci	6	0.90	1	11.11	1	0.10	1
2t	Thrips trybomi	1	0.15	1	2.78	1	0.00	1
2t	Thrips vulgatissimus	4	0.60	1	5.55	1	0.03	1
3p	Haplothrips aculeatus	3	0.45	1	5.55	1	0.02	1
3p	Haplothrips alpester	1	0.15	1	2.78	1	0.00	1
3p	Haplothrips angusticornis	406	60.69	5	5.55	1	3.37	3
3p	Haplothrips distinguendus	2	0.30	1	5.55	1	0.02	1
3p	Haplothrips leucanthemi	10	1.49	2	8.33	1	0.12	2
3p	Haplothrips niger	24	3.59	2	11.11	1	0.40	2
3p	Haplothrips reuteri	6	0.90	1	8.33	1	0.07	1
3p	Haplothrips tritici	1	0.15	1	2.78	1	0.00	1
3p	Liothrips setinodis	1	0.15	1	2.78	1	0.00	1
		Total	**669**	**100**				

				Site 4				
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	1	0.4	1	2.78	1	0.02	1
1a	Aeolothrips fasciatus	2	0.9	1	15.15	1	0.78	2
1a	Aeolothrips intermedius	12	5.1	3	11.11	1	0.09	1
1a	Melanthrips fuscus	1	0.4	1	2.78	1	0.01	1
1a	Melanthrips pallidior	1	0.4	1	2.78	1	0.05	1
2t	Anaphothrips obscurus	2	0.9	1	2.78	1	0.04	1
2t	Aptinothrips elegans	3	1.3	2	2.78	1	0.08	1
2t	Aptinothrips rufus	7	3.0	2	5.55	1	0.12	2
2t	Aptinothrips stylifer	5	2.1	2	8.33	1	4.20	3
2t	Chirothrips manicatus	118	50.4	5	27.78	2	0.12	2
2t	Frankliniella intonsa	1	0.4	1	2.78	1	0.27	2
2t	Kakothrips robustus	1	0.4	1	2.78	1	0.01	1
2t	Odontothrips loti	4	1.7	2	5.55	1	0.17	2
2t	Taeniothrips picipes	7	3.0	2	11.11	1	0.05	1
2t	Tenothrips frici	1	0.4	1	2.78	1	0.01	1
2t	Thrips montanus	1	0.4	1	2.78	1	0.02	1
2t	Thrips pelikani	2	0.9	1	5.55	1	0.19	2
2t	Thrips physapus	8	3.4	2	13.88	1	0.36	2
2t	Thrips tabaci	6	2.6	2	11.11	1	0.05	1
2t	Thrips trybomi	1	0.4	1	2.78	1	0.02	1
2t	Thrips validus	2	0.9	1	5.55	1	0.12	2
2t	Thrips vulgatissimus	5	2.1	2	8.33	1	8.33	4
3p	Haplothrips alpester	23	9.8	3	2.78	1	0.10	2
3p	Haplothrips angusticornis	8	3.4	2	11.11	1	0.05	1
3p	Haplothrips distinguendus	1	0.4	1	2.78	1	0.04	1
3p	Haplothrips leucanthemi	3	1.3	2	2.78	1	0.05	1
3p	Haplothrips niger	4	1.7	2	8.33	1	0.07	1
3p	Haplothrips reuteri	2	0.9	1	5.55	1	0.02	1
3p	Haplothrips setiger	1	0.4	1	2.78	1	0.01	1
3p	Haplothrips subtilissimus	1	0.4	1	2.78	1	0.01	1
		Total	**234**	**100**				

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

				Site 5				
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	1	0.4	1	2.78	1	0.03	1
1a	Aeolothrips fasciatus	3	1.2	2	8.33	1	0.39	2
1a	Aeolothrips intermedius	12	4.7	2	19.44	1	0.15	2
1a	Melanthrips fuscus	1	0.4	1	2.78	1	0.05	1
2t	Anaphothrips obscurus	2	0.8	1	2.78	1	0.01	1
2t	Aptinothrips elegans	1	0.4	1	2.78	1	0.19	2
2t	Aptinothrips rufus	18	7.0	3	11.11	1	4.05	3
2t	Aptinothrips stylifer	94	36.4	5	19.44	1	5.20	4
2t	Chirothrips manicatus	69	26.7	4	27.78	2	1.18	3
2t	Frankliniella intonsa	11	4.3	2	13.88	1	0.16	2
2t	Odontothrips loti	5	1.9	2	8.33	1	0.03	1
2t	Prosopothrips vejdovski	1	0.4	1	2.78	1	0.01	1
2t	Taeniothrips picipes	1	0.4	1	2.78	1	0.01	1
2t	Thrips dilatatus	1	0.4	1	2.78	1	0.02	1
2t	Thrips pelikani	2	0.8	1	2.78	1	0.06	1
2t	Thrips physapus	6	2.3	2	16.67	1	0.45	2
2t	Thrips tabaci	7	2.7	2	13.88	1	0.05	1
2t	Thrips trehernei	1	0.4	1	2.78	1	0.02	1
2t	Thrips vulgatissimus	2	0.8	1	2.78	1	2.78	3
3p	Haplothrips acanthoscelis	3	1.2	2	5.55	1	0.04	1
3p	Haplothrips aculeatus	2	0.8	1	5.55	1	0.02	1
3p	Haplothrips alpester	1	0.4	1	2.78	1	0.02	1
3p	Haplothrips angusticornis	2	0.8	1	2.78	1	0.01	1
3p	Haplothrips distinguendus	1	0.4	1	2.78	1	0.03	1
3p	Haplothrips leucanthemi	3	1.2	2	5.55	1	0.09	1
3p	Haplothrips niger	4	1.6	2	8.33	1	0.03	1
3p	Haplothrips reuteri	1	0.4	1	2.78	1	0.01	1
3p	Haplothrips tritici	1	0.4	1	2.78	1	0.01	1
3p	Hoplandrothrips bidens	1	0.4	1	2.78	1	0.01	1
3p	Liothrips setinodis	1	0.4	1	2.78	1	0.01	1
		Total	**258**	**100**				

Site Setu

fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	3	0.8043	1	6.67	1	0.054	1
1a	Aeolothrips fasciatus	6	1.6086	2	13.33	1	0.214	1
1a	Aeolothrips intermedius	37	9.9196	3	46.67	2	4.629	2
1a	Melanthrips fuscus	2	0.5362	1	3.33	1	0.268	1
1a	Melanthrips pallidior	30	8.0429	3	33.33	2	2.681	2
2t	Aptinothrips elegans	9	2.4129	2	10	1	0.241	1
2t	Aptinothrips rufus	14	3.7534	2	16.67	1	0.626	1
2t	Aptinothrips stylifer	26	6.9705	3	43.33	2	3.02	2
2t	Chirothrips manicatus	110	29.491	4	56.67	3	16.71	5
2t	Firmothrips firmus	3	0.8043	1	3.33	1	0.027	1
2t	Frankliniella intonsa	12	3.2172	2	23.33	1	0.751	2
2t	Kakothrips robustus	3	0.8043	1	6.67	1	0.054	1
2t	Odontothrips loti	10	2.681	2	20	1	0.536	1
2t	Taeniothrips picipes	14	3.7534	2	16.67	1	0.626	1
2t	Tenothrips frici	3	0.8043	1	3.33	1	0.027	1
2t	Thrips atratus	2	0.5362	1	3.33	1	0.018	1
2t	Thrips flavus	5	1.3405	2	6.67	1	0.089	1
2t	Thrips major	1	0.2681	1	3.33	1	0.009	1
2t	Thrips montanus	11	2.9491	2	13.33	1	0.393	1
2t	Thrips pelikani	3	0.8043	1	3.33	1	0.027	1
2t	Thrips physapus	23	6.1662	3	26.67	2	1.645	2
2t	Thrips tabaci	5	1.3405	2	10	1	0.134	1
2t	Thrips trehernei	1	0.2681	1	3.33	1	0.009	1
2t	Thrips validus	4	1.0724	2	6.67	1	0.072	1
3p	Haplothrips acanthoscelis	1	0.2681	1	6.67	1	0.018	1
3p	Haplothrips aculeatus	9	2.4129	2	3.33	1	0.08	1
3p	Haplothrips alpester	2	0.5362	1	6.67	1	0.036	1
3p	Haplothrips angusticornis	2	0.5362	1	6.67	1	0.054	1
3p	Haplothrips distinguendus	3	0.8043	1	6.67	1	0.036	1
3p	Haplothrips kurdjumovi	2	0.5362	1	6.67	1	0.072	1
3p	Haplothrips leucanthemi	4	1.0724	2	6.67	1	0.054	1
3p	Haplothrips niger	3	0.8043	1	6.67	1	0.072	1
3p	Haplothrips reuteri	4	1.0724	2	6.67	1	0.036	1
3p	Haplothrips setiger	2	0.5362	1	6.67	1	0.018	1
3p	Haplothrips subtilissimus	1	0.2681	1	6.67	1	0.054	1
3p	Haplothrips tritici	3	0.8043	1	3.33	1	3.33	2
	Total	373	100					

Site 1

fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	1	0.304	1	3.33	1	0.03	1
1a	Aeolothrips fasciatus	3	0.9119	1	3.33	1	0.142	2
1a	Aeolothrips intermedius	14	4.2553	2	20	1	1.216	3
1a	Melanthrips pallidior	20	6.079	3	23.33	1	0.567	2
2t	Aptinothrips rufus	8	2.4316	2	6.67	1	0.304	2
2t	Aptinothrips stylifer	15	4.5593	2	16.67	1	6.232	4
2t	Chirothrips manicatus	123	37.386	5	63.33	3	0.577	2
2t	Firmothrips firmus	3	0.9119	1	3.33	1	0.04	1
2t	Frankliniella intonsa	4	1.2158	2	6.67	1	0.466	2
2t	Odontothrips loti	23	6.9909	3	26.67	2	0.973	2
2t	Taeniothrips picipes	12	3.6474	2	13.33	1	0.122	2
2t	Thrips atratus	3	0.9119	1	6.67	1	0.041	1
2t	Thrips flavus	2	0.6079	1	3.33	1	0.101	1
2t	Thrips montanus	10	3.0395	2	10	1	0.365	2
2t	Thrips physapus	12	3.6474	2	16.67	1	0.304	2
2t	Thrips tabaci	6	1.8237	2	10	1	0.091	1
2t	Thrips trehernei	3	0.9119	1	3.33	1	0.02	1
2t	Thrips validus	2	0.6079	1	3.33	1	0.01	1
2t	Thrips vulgatissimus	1	0.304	1	3.33	1	0.02	1
3p	Haplothrips acanthoscelis	2	0.6079	1	3.33	1	0.03	1
3p	Haplothrips aculeatus	3	0.9119	1	3.33	1	0.091	1
3p	Haplothrips alpester	9	2.7356	2	6.67	1	0.284	2
3p	Haplothrips angusticornis	14	4.2553	2	6.67	1	0.162	2
3p	Haplothrips distinguendus	8	2.4316	2	6.67	1	0.101	1
3p	Haplothrips leucanthemi	5	1.5198	2	6.67	1	0.142	2
3p	Haplothrips niger	7	2.1277	2	10	1	0.152	2
3p	Haplothrips reuteri	5	1.5198	2	6.67	1	0.041	1
3p	Haplothrips setiger	2	0.6079	1	6.67	1	0.101	1
3p	Haplothrips tritici	5	1.5198	2	6.67	1	0.02	1
3p	Hoplandrothrips bidens	1	0.304	1	3.33	1	0.01	1
3p	Phlaeothrips coriaceus	1	0.304	1	3.33	1	0.02	1
3p	Phlaeothrips pillichianus	2	0.6079	1	3.33	1	3.33	3
	Total	329	100					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

Site 2

fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	1	0.3205	1	3.33	1	0.032	1
1a	Aeolothrips fasciatus	3	0.9615	1	10	1	0.385	2
1a	Aeolothrips intermedius	12	3.8462	2	23.33	1	0.075	1
1a	Melanthrips fuscus	1	0.3205	1	3.33	1	0.128	2
1a	Melanthrips pallidior	12	3.8462	2	13.33	1	0.085	1
2t	Aptinothrips elegans	2	0.641	1	3.33	1	0.032	1
2t	Aptinothrips rufus	3	0.9615	1	3.33	1	0.16	2
2t	Aptinothrips stylifer	15	4.8077	2	16.67	1	6.625	4
2t	Chirothrips manicatus	124	39.744	5	53.33	2	0.171	2
2t	Firmothrips firmus	1	0.3205	1	3.33	1	0.011	1
2t	Frankliniella intonsa	1	0.3205	1	6.67	1	0.043	1
2t	Odontothrips biuncus	2	0.641	1	3.33	1	0.107	2
2t	Odontothrips loti	10	3.2051	2	16.67	1	0.053	1
2t	Odontothrips phaleratus	1	0.3205	1	3.33	1	0.011	1
2t	Sericothrips bicornis	1	0.3205	1	3.33	1	0.043	1
2t	Taeniothrips picipes	4	1.2821	2	6.67	1	0.192	2
2t	Tenothrips frici	9	2.8846	2	13.33	1	0.555	2
2t	Thrips atratus	13	4.1667	2	16.67	1	0.107	2
2t	Thrips flavus	2	0.641	1	3.33	1	0.011	1
2t	Thrips montanus	1	0.3205	1	3.33	1	0.085	1
2t	Thrips physapus	8	2.5641	2	13.33	1	0.256	2
2t	Thrips tabaci	6	1.9231	2	13.33	1	0.171	2
2t	Thrips trehernei	4	1.2821	2	6.67	1	0.021	1
2t	Thrips validus	1	0.3205	1	3.33	1	0.011	1
2t	Thrips vulgatissimus	1	0.3205	1	3.33	1	0.043	1
3p	Haplothrips aculeatus	4	1.2821	2	6.67	1	0.385	2
3p	Haplothrips alpester	18	5.7692	3	13.33	1	1.068	3
3p	Haplothrips angusticornis	25	8.0128	3	20	1	0.128	2
3p	Haplothrips distinguendus	2	0.641	1	6.67	1	0.021	1
3p	Haplothrips leucanthemi	1	0.3205	1	3.33	1	0.149	2
3p	Haplothrips niger	14	4.4872	2	13.33	1	0.043	1
3p	Haplothrips reuteri	1	0.3205	1	3.33	1	0.096	2
3p	Haplothrips tritici	9	2.8846	2	13.33	1	13.33	5
	Total	312	100					

1a = Family Aeolothripidae
2t = Family Thripidae
3p = Family Phlaeothripidae

Site 3

fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips intermedius	48	8.1494	3	40	2	3.056	3
1a	Melanthrips fuscus	3	0.5093	1	3.33	1	0.017	1
1a	Melanthrips pallidior	9	1.528	2	13.33	1	0.204	2
2t	Anaphothrips obscurus	6	1.0187	2	10	1	0.102	2
2t	Aptinothrips elegans	2	0.3396	1	3.33	1	0.011	1
2t	Aptinothrips rufus	14	2.3769	2	6.67	1	0.159	2
2t	Aptinothrips stylifer	31	5.2632	3	26.67	2	1.041	3
2t	Chirothrips manicatus	70	11.885	4	63.33	3	7.52	4
2t	Firmothrips firmus	10	1.6978	2	10	1	0.153	2
2t	Frankliniella intonsa	11	1.8676	2	16.67	1	0.283	2
2t	Limothrips denticornis	4	0.6791	1	6.67	1	0.045	1
2t	Odontothrips confusus	1	0.1698	1	3.33	1	0.006	1
2t	Odontothrips loti	12	2.0374	2	16.67	1	0.311	2
2t	Odontothrips phaleratus	6	1.0187	2	16.67	1	0.142	2
2t	Oxythrips bicolor	1	0.1698	1	3.33	1	0.006	1
2t	Prosopothrips vejdovski	1	0.1698	1	3.33	1	0.006	1
2t	Taeniothrips picipes	16	2.7165	2	16.67	1	0.396	2
2t	Tenothrips frici	5	0.8489	1	10	1	0.068	1
2t	Thrips atratus	8	1.3582	2	16.67	1	0.226	2
2t	Thrips crassicornis	1	0.1698	1	3.33	1	0.006	1
2t	Thrips flavus	14	2.3769	2	16.67	1	0.368	2
2t	Thrips major	2	0.3396	1	3.33	1	0.011	1
2t	Thrips montanus	23	3.9049	2	13.33	1	0.407	2
2t	Thrips montivagus	3	0.5093	1	3.33	1	0.017	1
2t	Thrips pelikani	7	1.1885	2	6.67	1	0.079	1
2t	Thrips physapus	18	3.056	2	23.33	1	0.634	2
2t	Thrips tabaci	7	1.1885	2	16.67	1	0.17	2
2t	Thrips trehernei	8	1.3582	2	6.67	1	0.079	1
2t	Thrips trybomi	1	0.1698	1	3.33	1	0.006	1
2t	Thrips validus	2	0.3396	1	16.67	1	0.028	1
2t	Thrips vulgatissimus	9	1.528	2	16.67	1	0.226	2
3p	Haplothrips acanthoscelis	4	0.6791	1	10	1	0.068	1
3p	Haplothrips aculeatus	13	2.2071	2	10	1	0.221	2
3p	Haplothrips alpester	39	6.6214	3	20	1	1.053	3
3p	Haplothrips angusticornis	113	19.185	4	23.33	1	4.48	3
3p	Haplothrips distinguendus	3	0.5093	1	6.67	1	0.023	1
3p	Haplothrips leucanthemi	13	2.2071	2	13.33	1	0.272	2
3p	Haplothrips niger	45	7.6401	3	23.33	1	1.545	3
3p	Haplothrips reuteri	4	0.6791	1	6.67	1	0.034	1
3p	Haplothrips subtilissimus	1	0.1698	1	3.33	1	0.006	1
3p	Haplothrips tritici	1	0.1698	1	3.33	1	3.33	3
	Total	589	100					

		Site 4						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips albicinctus	1	0.2681	1	3.33	1	0.009	1
1a	Aeolothrips intermedius	23	6.1662	3	23.33	1	1.126	3
1a	Melanthrips fuscus	1	0.2681	1	3.33	1	0.009	1
1a	Melanthrips pallidior	4	1.0724	2	10	1	0.107	2
2t	Aptinothrips elegans	3	0.8043	1	3.33	1	0.027	1
2t	Aptinothrips stylifer	1	0.2681	1	3.33	1	0.009	1
2t	Chirothrips manicatus	137	36.729	5	50	2	14.48	5
2t	Frankliniella intonsa	2	0.5362	1	3.33	1	0.018	1
2t	Limothrips denticornis	2	0.5362	1	3.33	1	0.018	1
2t	Odontothrips loti	4	1.0724	2	10	1	0.107	2
2t	Taeniothrips picipes	8	2.1448	2	13.33	1	0.286	2
2t	Tenothrips frici	3	0.8043	1	6.67	1	0.054	1
2t	Thrips atratus	8	2.1448	2	10	1	0.188	2
2t	Thrips minutissimus	1	0.2681	1	3.33	1	0.009	1
2t	Thrips montanus	4	1.0724	2	6.67	1	0.054	1
2t	Thrips physapus	7	1.8767	2	13.33	1	0.25	2
2t	Thrips tabaci	12	3.2172	2	20	1	0.429	2
2t	Thrips trybomi	1	0.2681	1	3.33	1	0.009	1
2t	Thrips validus	1	0.2681	1	3.33	1	0.009	1
2t	Thrips vulgatissimus	5	1.3405	2	6.67	1	0.072	1
3p	Haplothrips aculeatus	2	0.5362	1	3.33	1	0.018	1
3p	Haplothrips alpester	7	1.8767	2	10	1	0.134	2
3p	Haplothrips angusticornis	108	28.954	4	20	1	1.233	3
3p	Haplothrips distinguendus	2	0.5362	1	6.67	1	0.036	1
3p	Haplothrips leucanthemi	3	0.8043	1	6.67	1	0.036	1
3p	Haplothrips niger	18	4.8257	2	20	1	0.643	2
3p	Haplothrips reuteri	1	0.2681	1	3.33	1	0.009	1
3p	Haplothrips setiger	1	0.2681	1	3.33	1	0.009	1
3p	Haplothrips tritici	2	0.5362	1	6.67	1	0.018	1
3p	Liothrips austriacus	1	0.2681	1	3.33	1	3.33	3
	Total	373	100					

		Site 5						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	1	0.3185	1	3.33	1	0.011	1
1a	Aeolothrips intermedius	14	4.4586	2	20	1	0.51	2
1a	Melanthrips pallidior	3	0.9554	1	6.67	1	0.064	1
2t	Anaphothrips obscurus	1	0.3185	1	3.33	1	0.011	1
2t	Aptinothrips elegans	1	0.3185	1	3.33	1	0.011	1
2t	Aptinothrips rufus	22	7.0064	3	20	1	1.4	3
2t	Aptinothrips stylifer	102	32.484	5	36.67	2	11.21	5
2t	Chirothrips manicatus	96	30.573	5	53.33	3	3.736	3
2t	Frankliniella intonsa	6	1.9108	2	6.67	1	0.127	2
2t	Limothrips schmutzi	1	0.3185	1	3.33	1	0.011	1
2t	Odontothrips loti	8	2.5478	2	10	1	0.255	2
2t	Taeniothrips picipes	2	0.6369	1	6.67	1	0.042	1
2t	Thrips atratus	1	0.3185	1	3.33	1	0.011	1
2t	Thrips major	1	0.3185	1	3.33	1	0.011	1
2t	Thrips montanus	2	0.6369	1	6.67	1	0.042	1
2t	Thrips pelikani	1	0.3185	1	3.33	1	0.011	1
2t	Thrips physapus	8	2.5478	2	20	1	0.51	2
2t	Thrips tabaci	1	0.3185	1	3.33	1	0.011	1
2t	Thrips validus	1	0.3185	1	3.33	1	0.011	1
2t	Thrips vulgatissimus	2	0.6369	1	3.33	1	0.011	1
3p	Haplothrips acanthoscelis	6	1.9108	2	13.33	1	0.255	2
3p	Haplothrips aculeatus	6	1.9108	2	13.33	1	0.17	2
3p	Haplothrips alpester	4	1.2739	2	6.67	1	0.085	1
3p	Haplothrips angusticornis	8	2.5478	2	10	1	0.223	2
3p	Haplothrips distinguendus	1	0.3185	1	3.33	1	0.011	1
3p	Haplothrips leucanthemi	1	0.3185	1	3.33	1	3.33	3
3p	Haplothrips niger	7	2.2293	2	13.33	1	0.255	2
3p	Haplothrips reuteri	4	1.2739	2	3.33	1	0.032	1
3p	Haplothrips tritici	3	0.9554	1	6.67	1	0.042	1
	Total	314	100					

1a = Family Aeolothripidae
2t = Family Thripidae
3p = Family Phlaeothripidae

		II year	Site Setu					
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	5	0.3666	1	5.55	1	0.049	1
1a	Aeolothrips intermedius	12	0.8798	1	19.44	1	0.014	1
1a	Melanthrips fuscus	5	0.3666	1	2.78	1	0.057	1
1a	Melanthrips pallidior	28	2.0528	2	8.33	1	0.409	2
2t	Chirothrips manicatus	1	0.0733	1	2.78	1	0.128	2
2t	Frankliniella intonsa	63	4.6188	2	33.33	2	0.024	1
2t	Frankliniella pallida	1	0.0733	1	2.78	1	0.004	1
2t	Kakothrips robustus	7	0.5132	1	11.11	1	0.041	1
2t	Odontothrips loti	67	4.912	2	22.22	1	0.635	2
2t	Taeniothrips picipes	39	2.8592	2	5.55	1	0.065	1
2t	Thrips atratus	16	1.173	2	13.89	1	0.02	1
2t	Thrips flavus	2	0.1466	1	2.78	1	0.033	1
2t	Thrips montanus	16	1.173	2	2.78	1	0.004	1
2t	Thrips montivagus	2	0.1466	1	5.55	1	0.061	1
2t	Thrips nigropilosus	15	1.0997	2	11.11	1	0.171	2
2t	Thrips pelikani	21	1.5396	2	11.11	1	3.462	3
2t	Thrips physapus	425	31.158	5	25	1	0.055	1
2t	Thrips pillichi	3	0.2199	1	8.33	1	0.25	2
2t	Thrips tabaci	41	3.0059	2	22.22	1	0.147	2
2t	Thrips trehernei	9	0.6598	1	8.33	1	0.006	1
2t	Thrips trybomi	1	0.0733	1	8.33	1	0.25	2
2t	Thrips validus	41	3.0059	2	16.67	1	0.049	1
2t	Thrips vulgatissimus	4	0.2933	1	8.33	1	8.33	4
3p	Haplothrips acanthoscelis	2	0.1466	1	5.55	1	0.004	1
3p	Haplothrips aculeatus	1	0.0733	1	2.78	1	0.304	2
3p	Haplothrips alpester	149	10.924	4	8.33	1	0.085	1
3p	Haplothrips angusticornis	14	1.0264	2	13.89	1	0.01	1
3p	Haplothrips distinguendus	1	0.0733	1	2.78	1	0.228	2
3p	Haplothrips leucanthemi	112	8.2111	3	11.11	1	1.947	3
3p	Haplothrips niger	239	17.522	4	22.22	1	0.016	1
3p	Haplothrips phyllophilus	1	0.0733	1	2.78	1	0.039	1
3p	Haplothrips reuteri	19	1.393	2	16.67	1	0.024	1
3p	Haplothrips tritici	2	0.1466	1	5.55	1	0.028	1
	Total	**1364**	**100**					

		II year	Site 1					
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	1	0.15	1	2.78	1	0.00	1
1a	Aeolothrips fasciatus	6	0.91	1	11.11	1	0.10	2
1a	Aeolothrips intermedius	33	4.98	2	16.67	1	0.83	2
1a	Melanthrips pallidior	33	4.98	2	11.11	1	0.50	2
2t	Aptinothrips stylifer	2	0.30	1	8.33	1	0.03	1
2t	Frankliniella intonsa	95	14.35	4	27.78	2	2.98	3
2t	Kakothrips robustus	5	0.76	1	8.33	1	0.05	1
2t	Odontothrips bluncus	1	0.15	1	2.78	1	0.00	1
2t	Odontothrips loti	56	8.46	3	11.11	1	0.84	2
2t	Taeniothrips picipes	30	4.53	2	13.89	1	0.59	2
2t	Tenothrips frici	2	0.30	1	5.56	1	0.02	1
2t	Thrips atratus	7	1.06	2	11.11	1	0.10	2
2t	Thrips major	2	0.30	1	8.33	1	0.03	1
2t	Thrips montanus	19	2.87	2	13.89	1	0.21	2
2t	Thrips montivagus	23	3.47	2	5.56	1	0.16	2
2t	Thrips nigropilosus	8	1.21	2	2.78	1	0.03	1
2t	Thrips pelikani	10	1.51	2	8.33	1	0.10	2
2t	Thrips physapus	71	10.73	4	22.22	1	2.05	3
2t	Thrips tabaci	61	9.21	3	22.22	1	1.88	3
2t	Thrips trybomi	3	0.45	1	5.56	1	0.02	1
2t	Thrips validus	28	4.23	2	13.89	1	0.48	2
2t	Thrips vulgatissimus	2	0.30	1	5.56	1	0.02	1
3p	Haplothrips acanthoscelis	2	0.30	1	5.56	1	0.02	1
3p	Haplothrips angusticornis	4	0.60	1	5.56	1	0.03	1
3p	Haplothrips distinguendus	2	0.30	1	5.56	1	0.01	1
3p	Haplothrips kurdjumovi	1	0.15	1	2.78	1	2.78	3
3p	Haplothrips leucanthemi	50	7.55	3	5.56	1	0.28	2
3p	Haplothrips niger	99	14.95	4	11.11	1	1.59	3
3p	Haplothrips reuteri	6	0.91	1	8.33	1	0.06	1
	Total	**662**	**100**					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

		Site 2						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	6	0.61	1	5.55	1	0.26	2
1a	Aeolothrips intermedius	46	4.69	2	16.67	1	0.03	1
1a	Melanthrips pallidior	26	2.65	2	8.33	1	0.27	2
2t	Anaphothrips obscurus	2	0.20	1	2.78	1	0.00	1
2t	Aptinothrips stylifer	1	0.10	1	2.78	1	0.06	1
2t	Frankliniella intonsa	22	2.24	2	26.78	2	0.27	2
2t	Kakothrips robustus	2	0.20	1	2.78	1	0.07	1
2t	Odontothrips biuncus	32	3.26	2	2.78	1	0.01	1
2t	Odontothrips confusus	3	0.31	1	2.78	1	0.37	2
2t	Odontothrips loti	129	13.15	4	16.67	1	0.44	2
2t	Taeniothrips picipes	26	2.65	2	8.33	1	0.10	2
2t	Thrips atratus	12	1.22	2	5.55	1	0.01	1
2t	Thrips minutissimus	1	0.10	1	2.78	1	0.10	2
2t	Thrips montanus	36	3.67	2	11.11	1	0.06	1
2t	Thrips montivagus	5	0.51	1	2.78	1	0.02	1
2t	Thrips pelikani	8	0.82	1	5.55	1	0.90	2
2t	Thrips physapus	159	16.21	4	27.78	2	0.03	1
2t	Thrips pillichi	1	0.10	1	2.78	1	0.12	2
2t	Thrips tabaci	42	4.28	2	11.11	1	0.16	2
2t	Thrips trehernei	14	1.43	2	2.78	1	0.15	2
2t	Thrips validus	54	5.50	3	19.44	1	0.08	1
2t	Thrips vulgatissimus	4	0.41	1	5.55	1	5.55	4
3p	Haplothrips alpester	10	1.02	2	8.33	1	0.17	2
3p	Haplothrips angusticornis	20	2.04	2	8.33	1	0.01	1
3p	Haplothrips distinguendus	1	0.10	1	2.78	1	0.53	2
3p	Haplothrips leucanthemi	187	19.06	4	11.11	1	1.38	3
3p	Haplothrips niger	122	12.44	4	16.67	1	0.14	2
3p	Haplothrips reuteri	8	0.82	1	13.89	1	0.03	1
3p	Haplothrips tritici	2	0.20	1	2.78	1	0.01	1
	Total	981	100					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

		Site 3						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	1	0.0836	1	2.78	1	0.016	1
1a	Aeolothrips fasciatus	7	0.5853	1	8.33	1	0.425	2
1a	Aeolothrips intermedius	61	5.1003	3	22.22	1	0.13	2
1a	Melanthrips fuscus	5	0.4181	1	5.55	1	0.051	1
1a	Melanthrips pallidior	11	0.9197	1	5.55	1	0.014	1
2t	Aptinothrips stylifer	7	0.5853	1	5.55	1	0.014	1
2t	Chirothrips manicatus	3	0.2508	1	8.33	1	0.014	1
2t	Firmothrips firmus	2	0.1672	1	2.78	1	0.088	1
2t	Frankliniella intonsa	38	3.1773	2	22.22	1	0.019	1
2t	Kakothrips robustus	6	0.5017	1	13.89	1	0.058	1
2t	Odontothrips biuncus	3	0.2508	1	5.55	1	0.005	1
2t	Odontothrips confusus	1	0.0836	1	2.78	1	0.325	2
2t	Odontothrips loti	140	11.706	4	19.44	1	0.179	2
2t	Taeniothrips picipes	11	0.9197	1	11.11	1	0.019	1
2t	Tenothrips frici	2	0.1672	1	5.55	1	0.009	1
2t	Thrips atratus	2	0.1672	1	2.78	1	0.002	1
2t	Thrips euphorbiae	1	0.0836	1	2.78	1	0.03	1
2t	Thrips flavus	13	1.087	2	5.55	1	0.005	1
2t	Thrips major	1	0.0836	1	2.78	1	0.009	1
2t	Thrips montanus	4	0.3344	1	11.11	1	0.009	1
2t	Thrips montivagus	1	0.0836	1	2.78	1	0.009	1
2t	Thrips nigropilosus	4	0.33	1	2.78	1	0.00	1
2t	Thrips pelikani	1	0.08	1	2.78	1	0.23	2
2t	Thrips physapus	101	8.44	3	27.78	2	1.77	3
2t	Thrips tabaci	76	6.35	3	25	1	0.04	1
2t	Thrips trybomi	2	0.17	1	2.78	1	0.03	1
2t	Thrips validus	11	0.92	1	8.33	1	0.06	1
2t	Thrips vulgatissimus	9	0.75	1	8.33	1	8.33	4
3p	Haplothrips aculeatus	1	0.08	1	2.78	1	0.24	2
3p	Haplothrips alpester	105	8.78	3	13.89	1	0.36	2
3p	Haplothrips angusticornis	31	2.59	2	13.89	1	0.03	1
3p	Haplothrips distinguendus	3	0.25	1	5.55	1	0.68	2
3p	Haplothrips leucanthemi	146	12.21	4	13.89	1	4.29	3
3p	Haplothrips niger	369	30.85	5	16.67	1	0.24	2
3p	Haplothrips reuteri	17	1.42	2	19.44	1	0.10	2
	Total	1196	100					

		Site 4						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	3	0.32	1	8.33	1	0.044	1
1a	Aeolothrips fasciatus	5	0.53	1	8.33	1	0.177	2
1a	Aeolothrips intermedius	20	2.13	2	11.11	1	0.071	1
1a	Melanthrips fuscus	4	0.43	1	8.33	1	0.062	1
1a	Melanthrips pallidior	7	0.75	1	8.33	1	0.426	2
2t	Chirothrips manicatus	6	0.64	1	5.55	1	0.106	2
2t	Frankliniella intonsa	18	1.92	2	22.22	1	0.118	2
2t	Kakothrips robustus	14	1.49	2	11.11	1	0.047	1
2t	Odontothrips loti	48	5.11	3	19.44	1	0.083	1
2t	Parafrankliniella verbasci	4	0.43	1	2.78	1	0.086	1
2t	Taeniothrips picipes	29	3.09	2	8.33	1	0.009	1
2t	Tenothrips frici	1	0.11	1	2.78	1	0.012	1
2t	Thrips atratus	4	0.43	1	8.33	1	0.027	1
2t	Thrips euphorbiae	3	0.32	1	5.55	1	0.018	1
2t	Thrips flavus	3	0.32	1	9.33	1	0.01	1
2t	Thrips incognitus	1	0.11	1	2.78	1	0.003	1
2t	Thrips minutissimus	1	0.11	1	2.78	1	0.03	1
2t	Thrips montanus	10	1.06	2	8.33	1	0.089	1
2t	Thrips montivagus	10	1.06	2	11.11	1	0.118	2
2t	Thrips pelikani	10	1.06	2	16.67	1	1.207	3
2t	Thrips physapus	68	7.24	3	27.78	2	1.272	3
2t	Thrips tabaci	43	4.58	2	27.78	2	0.03	1
2t	Thrips trehernei	1	0.11	1	2.78	1	0.012	1
2t	Thrips trybomi	4	0.43	1	5.55	1	0.03	1
2t	Thrips validus	5	0.53	1	8.33	1	0.018	1
2t	Thrips vulgatissimus	2	0.21	1	2.78	1	2.78	3
3p	Haplothrips alpester	5	0.53	1	5.55	1	2.122	3
3p	Haplothrips angusticornis	359	38.23	5	11.11	1	0.189	2
3p	Haplothrips distinguendus	16	1.70	2	8.33	1	0.949	2
3p	Haplothrips leucanthemi	107	11.40	4	8.33	1	1.1	3
3p	Haplothrips niger	124	13.21	4	16.67	1	0.053	1
3p	Haplothrips reuteri	3	0.32	1	5.55	1	0.006	1
3p	Haplothrips tritici	1	0.11	1	2.78	1	0.041	1
	Total	939	100					

		Site 5						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	5	1.78	2	11.11	1	1.107	3
1a	Aeolothrips intermedius	28	9.96	3	22.22	1	0.633	2
1a	Melanthrips fuscus	1	0.36	1	2.78	1	0.049	1
2t	Anaphothrips euphorbiae	8	2.85	2	2.78	1	0.742	2
2t	Frankliniella intonsa	75	26.69	4	27.78	2	0.198	2
2t	Odontothrips loti	5	1.78	2	11.11	1	0.079	1
2t	Stenothrips graminum	2	0.71	1	2.78	1	0.01	1
2t	Tenothrips frici	1	0.36	1	2.78	1	0.02	1
2t	Thrips atratus	2	0.71	1	2.78	1	0.02	1
2t	Thrips euphorbiae	2	0.71	1	2.78	1	0.01	1
2t	Thrips minutissimus	1	0.36	1	2.78	1	0.228	2
2t	Thrips physapus	23	8.19	3	19.44	1	0.761	2
2t	Thrips tabaci	11	3.91	2	13.89	1	0.544	2
2t	Thrips validus	11	3.91	2	5.55	1	0.04	1
2t	Thrips vulgatissimus	2	0.71	1	2.78	1	2.78	3
3p	Haplothrips acanthoscelis	2	0.71	1	2.78	1	0.188	2
3p	Haplothrips alpester	19	6.76	3	8.33	1	0.296	2
3p	Haplothrips angusticornis	10	3.56	2	8.33	1	0.03	1
3p	Haplothrips leucanthemi	1	0.36	1	2.78	1	0.663	2
3p	Haplothrips niger	67	23.84	4	13.88	1	0.247	2
3p	Haplothrips reuteri	5	1.78	2	11.11	1	0.04	1
	Total	281	100					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

		III year	Site Setu					
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	2	0.22	1	6.67	1	0.01	2
1a	Aeolothrips intermedius	55	6.04	3	50	2	3.02	3
1a	Melanthrips fuscus	3	0.33	1	6.67	1	0.02	2
1a	Melanthrips pallidior	21	2.31	2	16.67	1	0.38	2
2t	Chirothrips manicatus	6	0.66	1	10	1	0.07	2
2t	Frankliniella intonsa	51	5.60	3	53.33	3	2.99	3
2t	Kakothrips robustus	2	0.22	1	6.67	1	0.01	2
2t	Odontothrips loti	33	3.62	2	33.33	2	1.21	3
2t	Taeniothrips picipes	30	3.29	2	23.33	1	0.77	2
2t	Thrips atratus	19	2.09	2	20	1	0.42	2
2t	Thrips flavus	3	0.33	1	3.33	1	0.01	2
2t	Thrips montanus	25	2.74	2	20	1	0.55	2
2t	Thrips montivagus	1	0.11	1	3.33	1	0.00	2
2t	Thrips nigropilosus	7	0.77	1	10	1	0.08	2
2t	Thrips pelikani	46	5.05	3	46.67	2	2.36	3
2t	Thrips physapus	178	19.54	4	63.33	3	12.37	5
2t	Thrips pillichi	5	0.55	1	10	1	0.05	2
2t	Thrips tabaci	56	6.15	3	33.33	2	2.05	3
2t	Thrips trehernei	19	2.09	2	20	1	0.42	2
2t	Thrips trybomi	2	0.22	1	3.33	1	0.01	2
2t	Thrips validus	46	5.05	3	33.33	2	1.68	3
2t	Thrips vulgatissimus	1	0.11	1	3.33	1	0.00	2
3p	Haplothrips acanthoscelis	3	0.33	1	3.33	1	0.01	2
3p	Haplothrips aculeatus	2	0.22	1	3.33	1	0.01	2
3p	Haplothrips alpester	28	3.07	2	20	1	0.61	2
3p	Haplothrips angusticornis	54	5.93	3	46.67	2	2.77	3
3p	Haplothrips distinguendus	2	0.22	1	3.33	1	0.01	2
3p	Haplothrips leucanthemi	55	6.04	3	16.67	1	1.01	3
3p	Haplothrips niger	131	14.38	4	36.67	2	5.27	4
3p	Haplothrips reuteri	23	2.52	2	26.67	2	0.67	2
3p	Haplothrips tritici	2	0.22	1	6.67	1	0.01	2
	Total	911	100					

		III year	Site 1					
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	1	0.17	1	3.33	1	0.03	1
1a	Aeolothrips fasciatus	6	1.01	2	10	1	0.74	2
1a	Aeolothrips intermedius	44	7.43	3	36.67	2	0.56	2
1a	Melanthrips fuscus	1	0.17	1	3.33	1	0.11	2
1a	Melanthrips pallidior	20	3.38	2	20	1	1.22	3
2t	Chirothrips manicatus	9	1.52	2	13.33	1	1.85	3
2t	Frankliniella intonsa	82	13.85	4	40	2	0.41	2
2t	Odontothrips loti	36	6.08	3	30	2	0.96	2
2t	Taeniothrips picipes	19	3.21	2	20	1	0.14	2
2t	Tenothrips frici	4	0.68	1	6.67	1	0.19	2
2t	Thrips atratus	17	2.87	2	20	1	0.03	1
2t	Thrips minutissimus	1	0.17	1	3.33	1	0.09	1
2t	Thrips montanus	16	2.70	2	20	1	0.37	2
2t	Thrips montivagus	11	1.86	2	6.67	1	0.05	1
2t	Thrips nigropilosus	4	0.68	1	6.67	1	0.06	1
2t	Thrips pelikani	5	0.84	1	13.33	1	1.01	3
2t	Thrips physapus	45	7.60	3	30	2	2.23	3
2t	Thrips tabaci	44	7.43	3	36.67	2	0.06	1
2t	Thrips trybomi	1	0.17	1	3.33	1	0.07	1
2t	Thrips validus	13	2.20	2	13.33	1	0.14	2
2t	Thrips vulgatissimus	6	1.01	2	10	1	10.00	4
3p	Haplothrips acanthoscelis	6	1.01	2	6.67	1	0.07	1
3p	Haplothrips aculeatus	6	1.01	2	10	1	0.15	2
3p	Haplothrips alpester	9	1.52	2	3.33	1	0.32	2
3p	Haplothrips angusticornis	56	9.46	3	20	1	0.20	2
3p	Haplothrips distinguendus	6	1.01	2	6.67	1	0.25	2
3p	Haplothrips leucanthemi	22	3.72	2	10	1	1.50	3
3p	Haplothrips niger	89	15.03	4	23.33	1	0.39	2
3p	Haplothrips reuteri	10	1.69	2	13.33	1	0.07	1
3p	Haplothrips tritici	3	0.51	1	6.67	1	0.01	1
	Total	592	100					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

			Site 2					
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	4	0.75	1	6.67	1	0.39	2
1a	Aeolothrips intermedius	31	5.82	3	26.67	2	0.10	2
1a	Melanthrips fuscus	3	0.56	1	6.67	1	0.18	2
1a	Melanthrips pallidior	14	2.63	2	16.67	1	0.09	1
2t	Chirothrips manicatus	2	0.38	1	3.33	1	0.17	2
2t	Frankliniella intonsa	27	5.07	3	23.33	1	0.70	2
2t	Odontothrips biuncus	3	0.56	1	3.33	1	0.35	2
2t	Odontothrips loti	56	10.51	4	46.67	2	2.36	3
2t	Taeniothrips picipes	27	5.07	3	20	1	0.04	1
2t	Tenothrips frici	1	0.19	1	3.33	1	0.07	1
2t	Thrips atratus	12	2.25	2	20	1	0.71	2
2t	Thrips montanus	19	3.56	2	23.33	1	0.04	1
2t	Thrips montivagus	1	0.19	1	3.33	1	0.02	1
2t	Thrips pelikani	4	0.75	1	10	1	2.08	3
2t	Thrips physapus	111	20.83	4	60	3	4.28	3
2t	Thrips tabaci	38	7.13	3	40	2	0.08	1
2t	Thrips trybomi	1	0.19	1	3.33	1	0.12	2
2t	Thrips validus	19	3.56	2	20	1	0.11	2
2t	Thrips vulgatissimus	3	0.56	1	6.67	1	6.67	4
3p	Haplothrips alpester	16	3.00	2	10	1	1.69	3
3p	Haplothrips angusticornis	90	16.89	4	30	2	0.06	1
3p	Haplothrips distinguendus	1	0.19	1	3.33	1	0.14	2
3p	Haplothrips leucanthemi	22	4.13	2	16.67	1	0.66	2
3p	Haplothrips niger	21	3.94	2	16.67	1	0.22	2
3p	Haplothrips reuteri	7	1.31	2	16.67	1	0.09	1
	Total	533	100					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

			Site 3					
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	1	0.10	1	3.33	1	0.03	1
1a	Aeolothrips fasciatus	8	0.77	1	13.33	1	0.88	2
1a	Aeolothrips intermedius	69	6.63	3	40	2	0.12	2
1a	Melanthrips fuscus	11	1.06	2	10	1	0.09	1
1a	Melanthrips pallidior	9	0.86	1	10	1	0.08	1
2t	Aptinothrips rufus	3	0.29	1	3.33	1	0.01	1
2t	Aptinothrips stylifer	3	0.29	1	6.67	1	0.03	1
2t	Chirothrips manicatus	5	0.48	1	10	1	0.33	2
2t	Frankliniella intonsa	34	3.27	2	26.67	2	0.18	2
2t	Kakothrips robustus	2	0.19	1	6.67	1	0.07	1
2t	Odontothrips biuncus	8	0.77	1	10	1	0.53	2
2t	Odontothrips loti	55	5.28	3	33.33	2	0.61	2
2t	Taeniothrips picipes	19	1.83	2	10	1	0.05	1
2t	Thrips atratus	5	0.48	1	13.33	1	0.04	1
2t	Thrips euphorbiae	3	0.29	1	3.33	1	0.05	1
2t	Thrips flavus	16	1.54	2	13.33	1	0.03	1
2t	Thrips major	2	0.19	1	3.33	1	0.03	1
2t	Thrips montanus	9	0.86	1	16.67	1	0.03	1
2t	Thrips montivagus	2	0.19	1	3.33	1	0.03	1
2t	Thrips nigropilosus	9	0.86	1	10	1	0.31	2
2t	Thrips pelikani	32	3.07	2	16.67	1	1.33	3
2t	Thrips physapus	83	7.97	3	66.67	3	3.71	3
2t	Thrips tabaci	58	5.57	3	50	2	0.14	2
2t	Thrips trehernei	3	0.29	1	6.67	1	0.36	2
2t	Thrips validus	56	5.38	3	13.33	1	0.09	1
2t	Thrips vulgatissimus	7	0.67	1	10	1	10.00	
3p	Haplothrips acanthoscelis	7	0.67	1	10	1	0.01	1
3p	Haplothrips aculeatus	1	0.10	1	6.67	1	0.46	2
3p	Haplothrips alpester	72	6.92	3	26.67	2	2.25	3
3p	Haplothrips angusticornis	88	8.45	3	20	1	0.15	2
3p	Haplothrips distinguendus	8	0.77	1	10	1	1.25	3
3p	Haplothrips leucanthemi	130	12.49	4	36.67	2	7.43	4
3p	Haplothrips niger	211	20.27	4	40	2	0.46	2
3p	Haplothrips reuteri	12	1.15	2	20	1	0.04	1
	Total	1041	100					

		Site 4						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips ericae	4	1.08	2	10	1	0.03	1
1a	Aeolothrips fasciatus	1	0.27	1	3.33	1	0.22	2
1a	Aeolothrips intermedius	24	6.47	3	20	1	0.05	1
1a	Melanthrips fuscus	2	0.54	1	3.33	1	0.05	1
1a	Melanthrips pallidior	6	1.62	2	6.67	1	0.34	2
2t	Chirothrips manicatus	1	0.27	1	3.33	1	0.11	2
2t	Frankliniella intonsa	12	3.23	2	16.67	1	0.09	1
2t	Odontothrips loti	19	5.12	3	20	1	3.02	3
2t	Taeniothrips picipes	56	15.09	4	26.67	2	0.07	1
2t	Tenothrips frici	1	0.27	1	3.33	1	0.04	1
2t	Thrips atratus	5	1.35	2	10	1	0.03	1
2t	Thrips flavus	1	0.27	1	3.33	1	0.08	1
2t	Thrips montanus	9	2.43	2	13.33	1	0.18	2
2t	Thrips montivagus	5	1.35	2	10	1	0.16	2
2t	Thrips pelikani	6	1.62	2	6.67	1	1.02	3
2t	Thrips physapus	57	15.36	4	33.33	2	0.81	2
2t	Thrips tabaci	9	2.43	2	13.33	1	0.04	1
2t	Thrips trehernei	1	0.27	1	3.33	1	0.06	1
2t	Thrips validus	7	1.89	2	13.33	1	0.22	2
2t	Thrips vulgatissimus	6	1.62	2	13.33	1	13.33	5
3p	Haplothrips acanthoscelis	2	0.54	1	3.33	1	0.02	1
3p	Haplothrips aculeatus	2	0.54	1	3.33	1	0.04	1
3p	Haplothrips alpester	4	1.08	2	6.67	1	0.52	2
3p	Haplothrips angusticornis	29	7.82	3	20	1	0.32	2
3p	Haplothrips distinguendus	6	1.62	2	10	1	1.11	3
3p	Haplothrips leucanthemi	41	11.05	4	20	1	2.43	3
3p	Haplothrips niger	45	12.13	4	16.67	1	0.45	2
3p	Haplothrips reuteri	10	2.70	2	10	1	0.05	1
	Total	371	100					

		Site 5						
fam	species	nr.	%	cl.D	const.	cl.	W	cl.
1a	Aeolothrips fasciatus	3	0.91	1	6.67	1	1.03	3
1a	Aeolothrips intermedius	51	15.41	4	36.67	2	1.22	3
1a	Melanthrips fuscus	3	0.91	1	6.67	1	0.08	1
1a	Melanthrips pallidior	4	1.21	2	6.67	1	0.64	2
2t	Aptinothrips rufus	11	3.32	2	10	1	0.15	2
2t	Aptinothrips stylifer	5	1.51	2	10	1	0.03	1
2t	Chirothrips manicatus	1	0.30	1	3.33	1	0.37	2
2t	Frankliniella intonsa	37	11.18	4	36.67	2	0.11	2
2t	Odontothrips loti	32	9.67	3	26.67	2	0.08	1
2t	Taeniothrips picipes	1	0.30	1	3.33	1	0.01	1
2t	Thrips atratus	1	0.30	1	3.33	1	0.01	1
2t	Thrips euphorbiae	1	0.30	1	3.33	1	0.01	1
2t	Thrips major	1	0.30	1	3.33	1	0.01	1
2t	Thrips montanus	1	0.30	1	3.33	1	0.14	2
2t	Thrips pelikani	14	4.23	2	13.33	1	1.05	3
2t	Thrips physapus	26	7.85	3	30	2	0.63	2
2t	Thrips tabaci	7	2.11	2	10	1	0.24	2
2t	Thrips validus	8	2.42	2	6.67	1	0.02	1
2t	Thrips vulgatissimus	1	0.30	1	3.33	1	3.33	3
3p	Haplothrips acanthoscelis	1	0.30	1	3.33	1	0.18	2
3p	Haplothrips alpester	18	5.44	3	10	1	0.91	2
3p	Haplothrips angusticornis	30	9.06	3	16.67	1	0.10	2
3p	Haplothrips distinguendus	2	0.60	1	3.33	1	0.05	1
3p	Haplothrips leucanthemi	5	1.51	2	6.67	1	1.17	3
3p	Haplothrips niger	58	17.52	4	20	1	0.54	2
3p	Haplothrips reuteri	9	2.72	2	10	1	0.09	1
	Total	331	100					

1a= Family Aeolothripidae
2t= Family Thripidae
3p= Family Phlaeothripidae

thrips were collected twice every month, the number of samples were statistically determined.

Results and Discussion

The problem of estimation of thrips associations has a special theoretical and practical importance; on this base we could establish data on the dimension and gradation of those coenosis.

The structural indices of the studied thrips populations were: specific presence, numerical abundance, relative abundance (Heydeman's method) constance, W (index of ecological significance).

During the 3 years of researches, there have been collected 20629 exemplars, belonging to 78 species (from the Aeolothripidae, Thripidae, and Phlaeothripidae Family).

In the Şeţu site there have been collected 464 exemplars in the first year by the sweep net method and 903 exemplars by the shake method. The following year the differences are bigger: 263 exemplars to 1364, and last year, 373 exemplars respectively, 3178 (tab. 2)

As a general rule, the number of species is higher when sampled by the sweep net method; on the contrary, the number of individuals is maximum when sampled by the shaking method.

Between the species with low numerical abundance from the thrips associations, obtained by the sweep net method, we can mention: *Melanthips fuscus, Aeolothrips albicinctus* and *Rhipidothrips gratiosus* (Aeolothripidae Family) and through those with the highest abundance we can cite, from the same family *Aeolothrips intermedius* and *Melanthrips pallidior* (tab. 3).

From the Thripidae Family, the following species present the minimal abundance: *Firmothrips firmus, Kakothrips robustus, Tenothrips frici, Thrips pelikani, Thrips trehernei* (in the Şeţu site), *Thrips validus, Thrips vulgatissimus* (in the site 1), *Odontothrips biuncus and Thrips validus* (in the site 2), *Limothrips schmutzi, Oxythrips bicolor, Thrips major* (in the site 3), *Limothrips denticornis, Thrips minutissimus, Thrips pelikani, Thrips trybomi* (in the site 4) and *Anaphothrips obscurus, Aptinothrips elegans, Thrips major, Thrips trehernei* (in the site 5).

From Phlaeothripidae Family the following species present the lowest abundance: *Bolothrips bicolor, Haplothrips subtilissimus* (in the Şeţu site); *Haplothrips aculeatus, Phlaeothrips coriaceus* (in the site 1); *Haplothrips setiger* and *Hoplandrothrips bidens* (in the site 2); *Haplothrips acanthoscelis* and *Haplothrips tritici* (in the site 3); *Haplothrips aculeatus, Haplothrips distinguendus* and *Haplothrips setiger* (in the site 4) and *Haplothrips distinguendus* and *Haplothrips leucanthemi* (in the site 5).

There are species with low numerical abundance, which also have low values of frequency, being identified in one or maximum tree samples, still in small number.

Species such as: *Aeolothrips intermedius, Chirothrips manicatus, Melanthrips pallidior,*

Aptinothrips rufus, Aptinothrips stylifer, Haplothrips alpester, Haplothrips angusticornis, which have great numerical abundance, have a high ecological plasticity, each occupying an important ecological niche in the structural net of the whole meadow ecosystem. These species are found almost permanently, in all the site, in large number.

In different sites the values of numerical abundance of the species, varies depending on the physical-chemical and biotical complex of the environment. In the altitudinal part of the researches (800m-1500m) the equation of the rainfall gradient shows that the average rainfalls were of 1033 mm/year (tab.no.1); the rainfall amplitude reaches 285 mm/year (between 860mm-1145mm). Figure no.1 shows that the II year is a draughty one, fact that had a great deal of influence on the values of structural indices of the thrips populations.

To compare the six studied sites, the values of maximal numerical abundance obtained by shake method are between 903-1364 exemplars (in the tree years) in the Şeţu site, between 592-831 in the site 1, between 533-981 in the site 2, between 590-1196 in the site 3, between 317-939 in the site 4 and between 281-477 in the site 5.

It has been observed that the structure nets of thrips populations are different, depending on the site they belong to.

The largest number of exemplars appearing in the Şeţu site and in the 3 "Hut" site expresses a high diversity in the trophic functionality. Those sites with many of Composeae, Fabaceae and Poaceae, offer optimal conditions for high structure stability, which support the functional processes, especially the primary-secondary consumer one, of the thrips species.

In the site 5 "Plateau" *Frankliniella intonsa* detaches (more than 100 exemplars) but at lower altitudes, in the association *Scorzonero roseae-Festucetum nigricantis* the following species dominate: *Taeniothrips picipes, Haplothrips angusticornis, Haplothrips niger* and *Haplothrips leucanthemi* in the site 3; in *Festuca rubrae-Agrostetum capillaris*: *Odontothrips loti, Thrips physapus, Haplothrips alpester, Haplothrips leucanthemi* and *Haplothrips niger* in the site 2; *Odontothrips loti, Taeniothrips picipes, Thrips physapus, Haplothrips niger* and *Haplothrips leucanthemi*, in the site 1; *Frankliniella intonsa* and *Haplothrips niger* and in the Şeţu site: *Frankliniella intonsa, Thrips physapus, Haplothrips niger* and *Haplothrips leucanthemi*.

By both collecting methods, the largest number of exemplars was sampled in the association *Festuco rubrae-Agrostetum capillaris* by sweep net, in the site 3, by shaking, in the Şeţu site, and the lowest number of exemplars, by both methods, generally, in the association *Violo declinatae-Nardetum*, at 1500 m altitude where the environmental conditions are less favourable for thrips populations.

The values of the effective vary from a coenosis to the other, depending on the vegetal association, the curve presenting constant oscillations for the second year, a droughty one, in comparison with the first and the last one.

We could notice a decrease in the number of individual collected by the sweep net method, fact that reflects the degree of dryness of the plants off which they had been sampled.

The shake method expresses the degree of aggregation of the thrips on the blooming plants, since they are able to change hosts due to their polyphagy.

The shake method express the degree of the thrips aggregation in the blooming plants, the insects can succeed each to other plant species, due to their polyphagy.

We consider both methods useful, the number of species being superior by the sweep net while, though shaking, the number of exemplars is larger, both methods achieving the complete collection of thrips fauna from mountainous meadows.

In the table no. 3, 4 the relative abundance is also presented expressing the degree of participation of each species at the thrips associations; it is an important index in the appreciation of each species role inside the biocoenosis. It's relevant that there are big differences between the 78 thysanoptera species collected in the studied sites. Than, their values varies from one year to another, from a site to another one.

By sweep net method, in the Şeţu site, out of the 48 identificated species, 5 species, representing 69.26% from the total effective of thrips populations form a "specific nucleus": *Chirothrips manicatus, Aptinothrips stylifer, Aeolothrips intermedius, Melanthrips pallidior* and *Thrips physapus*. In the site 1, from the 48 species, "the specific nucleus" is made out of 3 species which cumulate 53.13%: *Chirothrips manicatus, Odontothrips loti* and *Haplothrips alpester*. In the site 2, from the total of 44 species 3 species form "the nucleus", representing 50.1% from total of populations. These are the following: *Chirothrips manicatus, Melanthrips pallidior* and *Haplothrips alpester*. In the site 3 "Hut" from the 51 species, the maximum number, 5 species, cumulate 62.35% from the total of effectiveness: *Haplothrips angusticornis, Chirothrips manicatus, Haplothrips alpester, Haplothrips niger* and *Aeolothrips intermedius*. In the site 4, only 2 species (71.29%) from the total of 49 species, compose "the specific nucleus": *Chirothrips manicatus* and *Haplothrips angusticornis*. In the site 5, 72.64% represent: *Aptinothrips stylifer, Chirothrips manicatus* and

Aptinothrips rufus.

The other species have variable percentages, but lower, at the establishment of the structural configuration of the thrips associations.

From "the specific nucleus" *Chirothrips manicatus* is the most representative species (40.82% in the Şeţu site; 34.77% in the site 1; 35.24% in the site 2; only 11.85% in the site 3; 58.53% in the site 4 and 32.75% in the site 5).

The following species have more suitable values of relative abundance: *Aptinothrips stylifer* (33.86%) in the site 5 and *Haplothrips angusticornis* (29.61%) in the site 3.

By shake method "the specific nucleus" is formed, on each surface, by several species with more homogenous values of the relative abundance, their percentage in the biocoenotic structure being lower.

In the Şeţu site, out of the all 36 species, only 6 species form "the specific nucleus", representing 68.36% of the total of thrips populations, collected on this surface, during of the 3 years of investigations. These species are: *Thrips physapus* (24.58%), *Haplothrips niger* (14.38%), *Frankliniella intonsa, Haplothrips leucanthemi, Haplothrips alpester* and *Thrips pelikani* (tab. no. 4).

In the site 1 out of 37 species, 7 form "the specific nucleus" with a percentage of 68.34% of the total of thrips populations: *Frankliniella intonsa* (19.86%), *Haplothrips niger* (17.94%), followed by *Melanthrips pallidior, Odontothrips loti, Thrips physapus* and *Taeniothrips picipes*.

Among group of 34 species, which form the thysanophenocoenosis in site 2, there are 6 representative species (67.76%) for "the specific nucleus", namely: *Thrips physapus* (16.73%), *Haplothrips niger* (13.71%), *Taeniothrips picipes, Haplothrips leucanthemi, Odontothrips loti* and *Haplothrips angusticornis*.

In the site 3, the 8 species, which form the structure of "the specific nucleus", have an amount of 78.98% in the determination of the structural configuration of thrips associations (from the total of 39 species). The representative species are: *Haplothrips niger* (24.05%) and *Haplothrips leucanthemi* (14.11%). The lower values of the relative abundance can be found for the following species: *Odontothrips loti, Thrips physapus, Haplothrips alpester, Thrips tabaci, Aeolothrips intermedius* and *Haplothrips angusticornis*.

In the site 4, at 1400 m altitude, from the 39 species found, *Haplothrips angusticornis* is the species with the most representative values of the relative abundance, among the 5 species of "the specific nucleus" which totalise 68.23% of the total of thrips populations. The other 4 species with high relative abundance are: *Taeniothrips picipes, Haplothrips niger, Thrips physapus, Haplothrips leucanthemi*, and their participation at the biocoenosis structure being smaller.

In the site 5 "Plateau" among the 5 species identificated here, in "the specific nucleus", the floricolous, polyphagous *Frankliniella intonsa* (19.65%), *Haplothrips niger* (14.33%) and *Thrips physapus* (13.96%) have higher values of the relative abundance. The rest of the species of "the basic nucleus" *Aeolothrips intermedius* and *Haplothrips angusticornis* have a smaller percentage in the compound of the coenosis in this site.

The specific nucleus of thrips species accounts the most actually for the resources of the meadow sites, having the most influence on the other thrips species from the association.

Thus, the using a single method would give an incomplete structural configuration of the thysanoptera associations from the mountainous, praticolous sites; always must collect with both methods: sweep and shake.

Frequency represents an ecological index, which characterises together with other structural parameters, thrips populations in the studies sites.

From the analyses of the species frequency (tab. no. 3; 4) we could notice that the species with high numerical abundance also present high values of the frequency.

Thus, for the species *Chirothrips manicatus*, the frequency percentages variates between 63.33% - 86.67%. For *Frankliniella intonsa* the percentages were, generally, lower than those of the former species.

The other thysanoptera species are characterised by a high variation of the frequency, from the presence of the species in one sample to half of the samples.

Constance of the species is closely related to the frequency and expresses their participation in time to the studied structures.

Depending on the frequency percentage, the species can be divided into euconstant species, with values over 75% (cl. 4), constant species (over 50%, cl. 3), accessories species (over 25%, cl. 2) and accidental species, with frequency under 25% (cl. 1).

In the sites characterised by the vegetal association *Festuco rubrae-Agrostetum capillaris*, the sampling with the sweep net, displayed 1 eu-constant species: *Chirothrips manicatus*, 3 accessories species: *Aeolothrips intermedius, Taeniothrips picipes, Haplothrips niger* which represent, a percentage of 10.25% from the total of identified species, the rest of

the thrips species being considered as belonging to the accidental species group.

In the site with the vegetal association *Scorzonero roseae-Festucetum nigricantis*, the species *Chirothrips manicatus* is the most representative, constant and *Aeolothrips intermedius*, as accessory species. The accidental species make up the majority of 93.75%, being distributed on all three thysanoptera families.

The site with the vegetal association *Violo declinatae-Nardetum*, out of the 32 identified thrips, an accessory species *Aeolothrips intermedius* and a constant one; *Chirothrips manicatus* present a similar number in the accidental category (30).

The shake method, in comparison with the sweep net, reveals another distribution of the species in relation with their frequency percentage. So, the site with the association *Festuco rubrae-Agrostetum capillaris*, labels only the species *Frankliniella intonsa*, as constant species, 6 species as accessory (*Aeolothrips intermedius, Haplothrips leucanthemi, Haplothrips niger, Odontothrips loti, Thrips physapus, Thrips tabaci*), the rest, of 78.79% as accidental species.

The index of ecological significance (W) expresses the edifying characteristically species, (class 4 and 5) influent ones (class 3) and accidental ones (class 1 and 2) in each of the thrips associations, in every site (tab. no. 3; 4).

In the site with the vegetal association *Scorzonero roseae-Festucetum nigricantis*, at 1400 m, we could find only accessory species: *Haplothrips reuteri, Taeniothrips picipes* and *Thrips tabaci*, the others, 90.63% being included in the accidental category.

In the site characterised by the association *Violo declinatae-Nardetum*, one species belongs to the constant category, 3 species to the accessory one, and the rest of 87.1% to the accidental category.

Conclusions

- The ecological study of the structure of thrips associations was conducted in 6 sites of secondary meadows, in the Gârbova Massive, differentiated by the vegetal associations and by altitude (the Şeţu site is placed in fir-beech zone at 800 m; the site 1, 2, 3 in beech under zone at 900 m, 1050 m and respectively 1200 m; the site 4 at 1400 m in spruce-fire under zone and the site 5, in spruce-fire under zone, at 1500 m).

- The mechanical and physical factors were investigated during three years in our own meteorological station, placed in the Şeţu site.

- The following vegetal associations characterise the sites from the Gârbova Massive: *Festuco rubrae-Agrostetum capillaris* Horv. 51 for the sites: Şeţu, 1, 2, 3; *Scorzonero roseae-Festucetum nigricantis* (Puşcaru et al. 56) Coldea 87 for the site 4 and *Violo declinatae-Nardetum* Simon 66 for the site 5.

- The general analysis of the thysanoptera diversity established a large number of species 78; by sweep net method there were collected 68 species, which means 87.18% from total of identified species, and by shake method 58 species (78.36%).

- Among the sites of the Gârbova Massive, those characterised by the vegetal association *Festuco rubrae-Agrostetum capillaris* present the richest structural net of the thrips associations with a numerical abundance of 1780 exemplars (23.89%) during the three years of researches, in comparation to the 1078 exemplars (14.48%) in the site 5, with the vegetal association *Violo declinatae-Nardetum* (by sweep net method).

- The spatial dynamics display high values of the numerical abundance, with 1196 exemplars (22.05%) in the IInd year in the site 3 "Hut" and 1044 exemplars (27.55%) in the III^{es} year, sites where there is a compression of the fön current, evolving heat, which determines a specific microclimate, favourable to the thrips development.

In "the specific nucleus", *Chirothrips manicatus* makes up 34.77% in the site 1; 35.14% in the site 2; 11.85% in the site 3; 58.53% in the site 4 and 32.75% in the site 5, by using the sweeping method which also collect, the apterous males of the thrips species.

By the shake method "the specific nucleus" of thrips is formed out of several species with close values of the relative abundance.

- In the category of constant species (with frequency index higher than 50%) the species can be mentioned: *Chirothrips manicatus* (by sweep net method) and *Frankliniella intonsa* (by shake method), species typically eurioecs.

- The index of ecological significance (W) reveals few edificatory species, the majority being accidental.

- The values of the effectives varies from one coenosis to another, depending on the vegetal associations, on the altitude display constant oscillations for the second year, the droughty one, in comparison to the other two. A certain reduction of the collections of individuals, by sweep net method has been detected, which also reflect, the degree of the vegetation's dryness. The shake method establishes the degree of the thrips aggregation on the existing blooming plants, the insects, being able to change hosts, due to their polyphagy.

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Received: 10.02.2001
Accepted: 21.02.2001
Printed: 6.12.2001