

# NEMATODE ASSEMBLAGES OF AN OILSEED RAPE FIELD IN THE VICINITY OF PLOVDIV DISTRICT

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Terrestrial nematodes are among the key groups organisms in soil and contribute significantly to its functioning. In the frame of STACCATO project they will be used as bioindicators for assessing ecosystem functions/services in rapeseed (*Brassica napus* L.) related to the different share of surrounding semi-natural grasslands. Here we present some preliminary results about nematode diversity in one out of 11 selected rapeseed fields. It is located in the vicinity of Kostievo village.

Multiple core samples were collected twice – during rapeseed flowering stage (May) and before harvesting (June) at three distances (10 m, 60 m, 110 m) from the field edge. Nematodes were isolated from 100 g of soil by decanting and sieving method, fixed, dehydrated and mounted on permanent slides. Taxonomic structure and spatial distribution of nematode assemblages were evaluated and discussed.

Overall 58 genera were identified, nematode diversity and abundance being lower before harvesting. *Filenchus*, *Aporcelaimellus* and *Irantylenchus* were the dominant genera, however their abundances declined during ripening phase. *Sicaguttur* and *Pseudoaulolaimus* (*P. anchilocaudatus*) represent new geographical records.

Relative abundance of nematode genera

	May_10	May_60	May_110	June_10	June_60	June_110
<i>Filenchus</i>	15.4	18.2	9.7	35.3	17.2	19.4
<i>Aporcelaimellus</i>	20.7	10.8	28.4	8.1	11.1	17.4
<i>Irantylenchus</i>	5.3	13.5	15.7	0.4	8.1	8.3
<i>Chiloplacus</i>	3.2	2.5	4.2	5.1	14.1	6.7
<i>Eucephalobus</i>	5.9	4.4	5.5	4.3	3.0	9.9
<i>Pratylenchus</i>	2.7	3.9	4.2	5.1	2.0	2.8
<i>Ditylenchus</i>	4.3	9.1	1.3	0.9	1.0	2.4
<i>Laevius</i>	3.2	1.4	3.4	1.3	5.1	4.3
<i>Neopsilenchus</i>	3.7	2.1	0.4	1.7	6.1	1.6
<i>Aphelenchus</i>	0.5	3.3	1.7	1.7	5.1	2.4
<i>Tylenchorhynchus</i>	0.5	1.0	1.7	3.0	0	6.3
<i>Coslenchus</i>	1.6	1.4	4.2	2.6	0	2.4
<i>Plectus</i>	3.7	1.5	2.5	0.4	2.0	0.8
<i>Nothotylenchus</i>	3.7	3.1	0	1.3	1.0	1.6
<i>Oxydirus</i>	0.5	0.4	0.8	2.1	6.1	0.4
<i>Aphelenchoides</i>	0	5.0	0.4	3.0	1.0	0.8
<i>Scutylenechus</i>	0	2.3	5.5	0	2.0	0
<i>Crassolabium</i>	1.1	1.4	0.8	3.0	1.0	1.6
<i>Belondira</i>	2.1	0	1.7	0.9	3.0	0.4
<i>Merlinius</i>	1.6	1.0	0	3.0	2.0	0
<i>Helicotylenchus</i>	2.1	1.0	0	3.0	0	1.2
<i>Microdorylaimus</i>	0	0.6	0	2.6	2.0	0.8
<i>Amplimerlinius</i>	2.1	0	0	0.9	2.0	0.4
<i>Aporcelaimus</i>	3.2	0	0.8	0	1.0	0
<i>Acrobeloides</i>	1.1	2.5	0	1.3	0	0
<i>Sicaguttur</i>	1.1	0.6	0	1.3	1.0	0.8
<i>Ecumenicus</i>	0.5	0.2	0.8	0.4	0	2.4
<i>Panagrolaimus</i>	0	3.1	1.3	0	0	0
<i>Paraphelenchus</i>	1.1	0.8	0.4	1.3	0	0
<i>Mesorhabditidae</i>	0.5	1.0	0	0.4	1.0	0
<i>Basiria</i>	1.6	0.4	0.4	0	0	0.4
<i>Labronema</i>	0	0	0.4	1.3	1.0	0
<i>Mesodorylaimus</i>	0	0	0.8	1.7	0	0
<i>Geomonhystera</i>	1.1	0	0	0.9	0	0.4
<i>Rotylenchus</i>	0	0.2	0	0	0	1.6
<i>Tylencholaimellus</i>	0	0.4	1.3	0	0	0
<i>Pseudacrobeles</i>	0	0.2	0	0	1.0	0.4
<i>Seinura</i>	1.6	0	0	0	0	0
<i>Boleodorus</i>	0.5	0	0	0.9	0	0
<i>Telotylenchus</i>	1.1	0.2	0	0	0	0
<i>Tylenchus</i>	1.1	0.2	0	0	0	0
<i>Myrianchulus</i>	1.1	0	0	0	0	0
<i>Prionchulus</i>	0	0.2	0.4	0	0	0.4
<i>Pseudhalenchus</i>	0	1.0	0	0	0	0

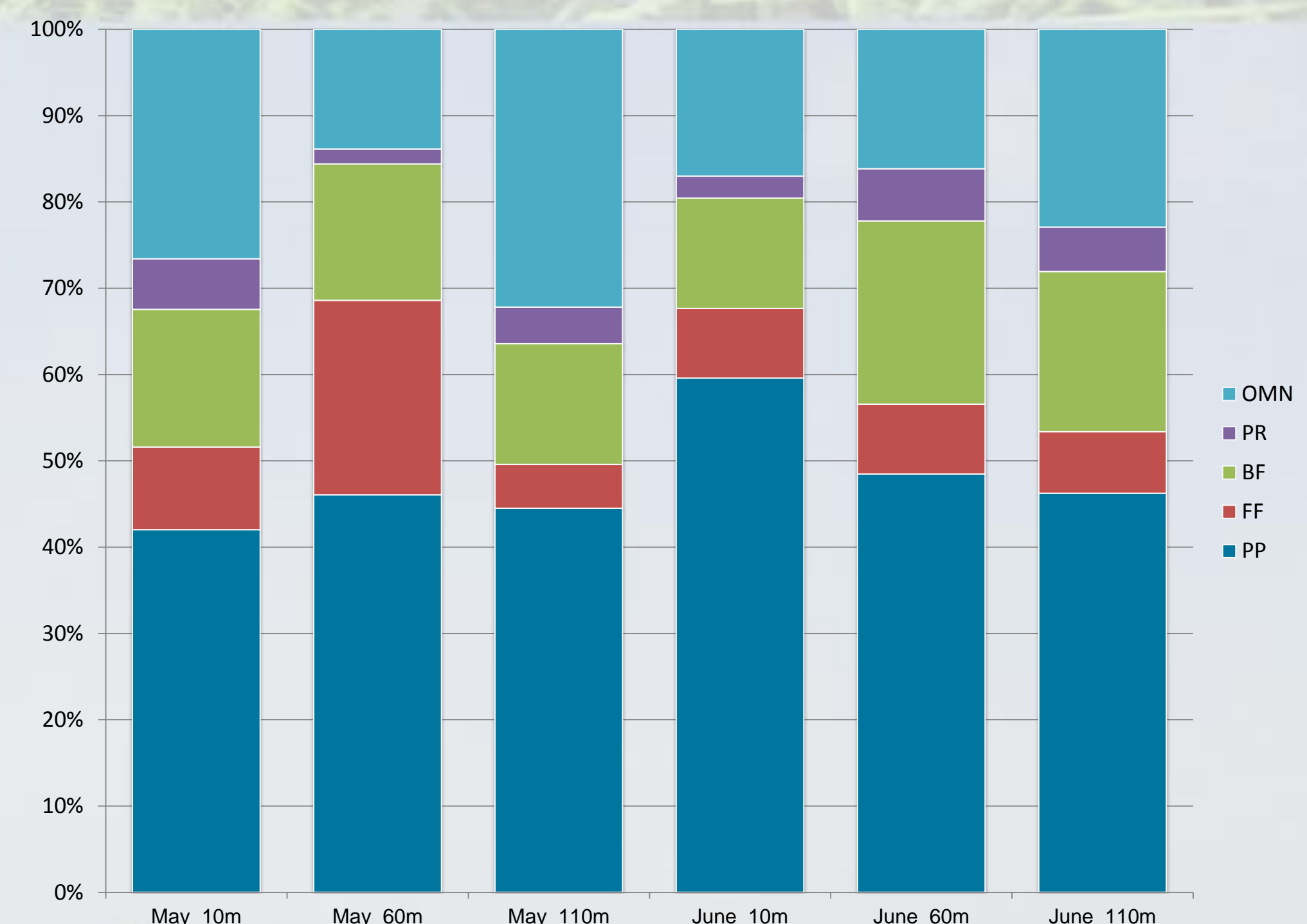
\*(above 1% are presented)



*Sicaguttur* sp.

Average number of genera from various trophic groups in sampling periods

Trophic group	Number of genera		
	In total	May	June
PP	22	18	15
OMN	9	9	8
BF	14	12	9
FF	7	7	5
PR	6	5	4
Mean abundance		314	196



Distribution of trophic groups was similar for both sampling periods: overall dominance of plant parasitic nematodes (PP) which were also the most diverse group, followed by omnivorous nematodes (OMN), bacterial feeders (BF) and fungal feeders (FF), the latter being more abundant during the flowering period; predatory nematodes (PR) occurred in very low numbers. Percentage of plant parasitic nematodes was higher during ripening of rape. Our findings about PP nematodes are in agreement with a similar study from Moldova (37-58%) (Iurcu-Străistraru et al. 2012), where they predominated in rapeseed fields. While in another study from Italy (Manachini et al. 2005) PP nematodes were found in a very low proportion (7%).

Plant parasitic nematode genera		
<i>Pratylenchus</i>	<i>Scutylenechus</i>	<i>Boleodorus</i>
<i>Pratylenchoides</i>	<i>Trophurus</i>	<i>Tylenchus</i>
<i>Rotylenchus</i>	<i>Filenchus</i>	<i>Irantylenchus</i>
<i>Helicotylenchus</i>	<i>Aglencus</i>	<i>Dorylaimellus</i>
<i>Amplimerlinius</i>	<i>Basiria</i>	<i>Oxydirus</i>
<i>Merlinius</i>	<i>Miculenchus</i>	<i>Belondira</i>
<i>Tylenchorhynchus</i>	<i>Coslenchus</i>	
<i>Telotylenchus</i>	<i>Neopsilenchus</i>	

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