

PESTICIDI

PREHOD V TRAJNOSTNO RABO

20. junija 2023

10.00-12.00

on-line

*2. DELAVNICA S
PREDSTAVITVIJO
REZULTATOV VZORČENJA*

PROJEKT SPRINT



Sofinancirano s programom
Evropske unije: Obzorje 2020





SPRINT

SUSTAINABLE PLANT PROTECTION TRANSITION

20. 6. 2023 med 10.00 in 12.00

PREHOD V TRAJNOSTNO VARSTVO
RASTLIN:
CELOSTEN ZDRAVSTVENI PRISTOP

Program:

Predstavitel rezultatov vzorčenja prisotnosti pesticidov v agro-ekosistemu - Prehod v trajnostno rabo pesticidov

- 10.00-10.10** **Uvodni nagovori - Pomen tovrstnih raziskav za ustrezno obveščenost splošne in drugih javnosti**
prof. dr. Marina Pintar, dekanja, Biotehniška fakulteta, Univerza v Ljubljani
prof. dr. Denis Rusjan, prodekan, Oddelek za agronomijo, Biotehniška fakulteta, Univerza v Ljubljani
- 10.10-10.30** **Vloga in pomen fitofarmaceutskih sredstev v sodobnem kmetijstvu in trendi**
prof. dr. Andrej Simončič, direktor Kmetijskega inštituta Slovenije
- 10.30 – 11.00** **Predstavitel rezultatov vzorčenja prisotnosti pesticidov v agro-ekosistemu: Projekt SPRINT – Prehod v trajnostno rabo pesticidov**
doc. dr. Matjaž Glavan, Biotehniška fakulteta, Univerza v Ljubljani
- 11.00 – 11.20** **Vprašanja o rezultatih**
- 11.20 – 11.40** **Prehod k bolj trajnostni rabi pesticidov je mogoč. Kako ga izvesti?**
dr. Ana Frelih Larsen, Ecologic Institute, Nemčija
- 11.40 – 12.00** **Razprava**



Sofinancirano s programom
Evropske unije: Obzorje 2020





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SUSTAINABLE PLANT PROTECTION TRANSITION

Rezultati terenskega vzorčenja agroekosistema

Poletje 2021



European
Commission



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PREHOD V TRAJNOSTNO VARSTVO RASTLIN:
CELOSTEN ZDRAVSTVENI PRISTOP

doc. dr. Matjaž Glavan, Biotehniška fakulteta, Univerza v Ljubljani

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SUSTAINABLE PLANT PROTECTION TRANSITION:
A GLOBAL HEALTH APPROACH

H2020 Project
2020-2025
28 partnerjev

WAGENINGEN UNIVERSITY & RESEARCH LQM Sound science. Defensible decisions.
 u^b UNIVERSITÄT BERN
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 INSTITUT ZA POLJOPRIVREDU I TURIZAM INSTITUTE OF AGRICULTURE AND TOURISM 1875.
 Universidad Politécnica de Cartagena
 Radboud Universiteit
 IISPV INSTITUT D'INVESTIGACIÓ SANITÀRIA PERE VIRGILI
 Istituto Ramazzini COOPERATIVA SOCIALE ONLUS
 universidade de aveiro
 MUNI Masaryk University
 ZOOGDIER VERENIGING
 Helmholtz-Zentrum Geesthacht Zentrum für Material- und Küstenforschung
 Utrecht University
 FiBL
 DTU Technical University of Denmark
 eco logic
 UCC University College Cork, Ireland Coláiste na hOllscoile Corcaigh
 Universiteit Antwerpen
 UNIVERSITY OF HOHENHEIM
 University of Ljubljana
 UNIVERSITY OF GLOUCESTERSHIRE
 WAGENINGEN UNIVERSITY & RESEARCH
 INTA
 Food and Agriculture Organization of the United Nations
 UNIVERSITÀ CATTOLICA del Sacro Cuore
 université de BORDEAUX

Uvod

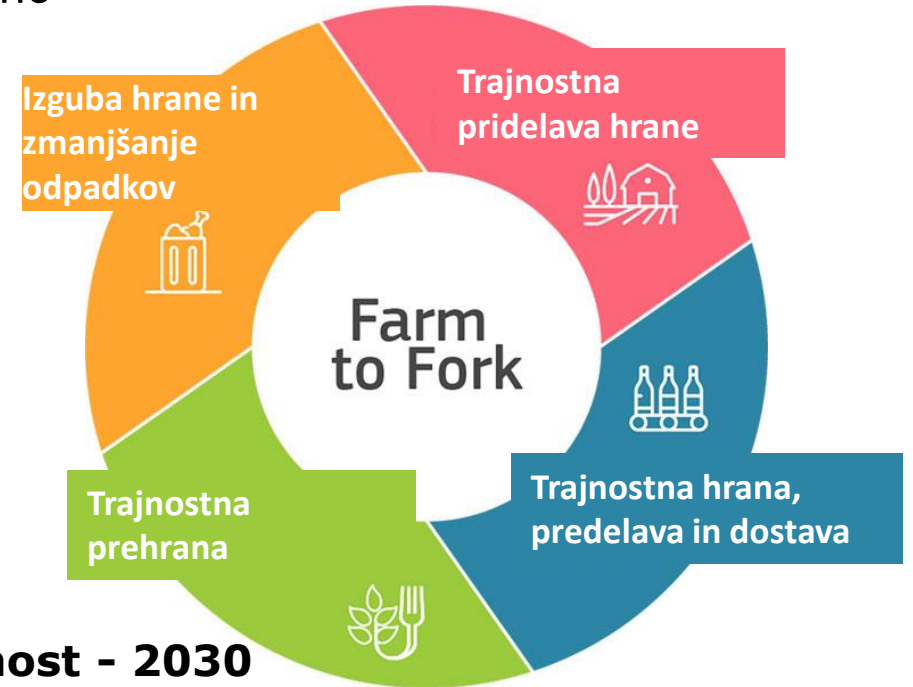
2000 pesticidov na trgu v EU vsebuje skoraj 500 aktivnih substanc

Cilji Evropske komisije

Strategija od vil do vilic - 2030

Farm to Fork Strategy - 2030

- Zmanjšanje uporabe sintetičnih FFS za 50%
- 20% zmanjšanje porabe gnojil
- Povečanje obsega ekološkega kmetijstva iz 8% na 25%



Strategija za biotsko raznovrstnost - 2030

Biodiversity strategy - 2030

- Dopolnjuje strategijo "Od vil do vilic".
- 10% kmetijskih površin preoblikovati v krajine z visoko biotsko raznovrstnostjo in obrniti trend upadnja genetske raznovrstnosti.

**Toda kako naj dosežemo ta ambiciozen načrt?
Ali smo ga v Sloveniji že dosegli?**

Uvod – projekt SPRINT

Cilj

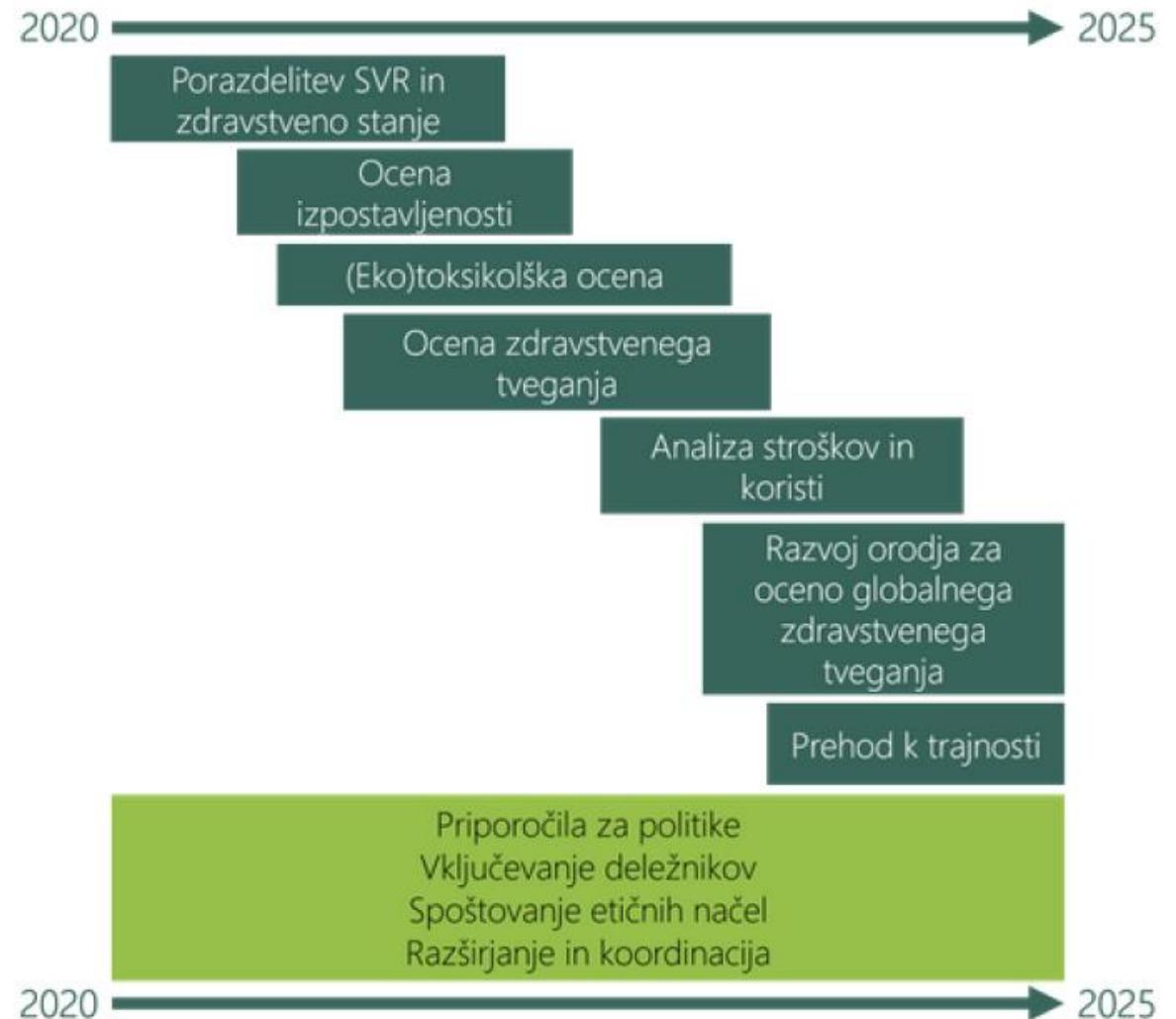
- Razviti orodje za oceno globalnega zdravstvenega tveganja (Global Health Risk Assessment Toolbox)
- Ocena učinkov FFS na okolje in zdravje ljudi
- Poti prehoda k trajnostnemu varstvu rastlin

Trajanje projekta 9/2020 – 8/2025

- 11 raziskovalnih območij
- terensko delo



ČASOVNICA KLJUČNIH REZULTATOV



Uvod - SPRINT pristop

Teren

ostanki pesticidov, sestava mešanic in razširjenost
=> izpostavljenost



Testi na
do 200 a.s. in metabolitov



Laboratorij
Pristop osnovan na posameznih komponentah, v več
vzporednih testiranjih
EFSA testi + novi SPRINT indikatorji



Socio-
ekonomski
podatki



SPRINT lista analiziranih FSS (junij 2021)

LC-MS/MS ESI pos	Acetamidiprid	Dimoxystrobin	Haloxyfop	Metolachlor (S)	Propamocarb	Spirotetramat
	<i>Acetamidiprid-N-desmethyl</i>	Dinotefuran	Imazalil	Metrafenone	Propaquizafop	<i>Spirotetramat-enol</i>
	Ametoctradin	Diuron	Imidacloprid	Metribuzin	Propiconazole	<i>Spirotetramat-enol-glucoside</i>
	Atrazine	Emamectin	<i>Imidacloprid (5-hydroxy)</i>	Metsulfuron-methyl	Propoxur	<i>Spirotetramat-keto-hydroxy</i>
	Azoxystrobin	Epoxiconazole	<i>Imidacloprid (desnitro-)</i>	Myclobutanil	Propyzamide	<i>Spirotetramat-mono-hydroxy</i>
	<i>Azoxystrobin-O-demethyl</i>	Ethofumesate	Indoxacarb	Napropamide (M)	Prosulfocarb	Spiroxamine
	Bixafen	Famoxadone	iprovalicarb	Nicosulfuron	<i>Prothioconazole desthio</i>	Tebuconazole
	Boscalid	Fenbuconazole	isoproturon	Oryzalin	Pymetrozine	Terbutylazine
	Carbendazim	Fenhexamid	Isoxaben	Oxadixyl	Pyraclostrobin	<i>Terbutylazine-desethyl</i>
	Chlorantraniliprole	Fenoxycarb	Isoxaflutole	Oxyfluorfen	Pyraflufen-ethyl	Terbutryn
	Chlorotoluron	Fenpropidin	Lenacil	Penconazole	Pyrethrin I	Tetraconazole
	Clomazone	Fenpropimorph	Linuron	Pencycuron	Pyrethrin II	Thiabendazole
	Clothianidin	Flazasulfuron	Mandipropamid	Pendimethalin	Pyrimethanil	Thiacloprid
	Cyantraniliprole	Fonicamid	Metalaxyl (M)	penoxulam	<i>Pyrimethanil_M605F002</i>	Thiamethoxam
	Cyflufenamide	Florasulam	<i>Metalaxyl CGA 62826</i>	Phosmet	Pyriofenone	Thiencarbazone-methyl
	cymoxanil	Flufenacet	Metamitron	<i>Phosmet oxon</i>	Pyriproxyfen	Thiophanate-methyl
	Cyproconazole	Fluopicolide	<i>Metamitron-desamino</i>	Phoxim	Pyroxsulam	<i>Tolyfluanid DMST</i>
	Cyprodinil	Fluopyram	Metazachlor	Piperonyl butoxide	Quinoxifen	Tri-allate
	<i>Cyprodinil CGA304075</i>	<i>Fluopyram benzamide</i>	Metconazole	Pirimicarb	Quizalofop	Tricyclazole
	Difenoconazole	Fluoxastrobin	Methabenzthiazuron	Pirimiphos-methyl	Rimsulfuron	Trifloxystrobin
Diflufenican	Flupyradifurone	Methiocarb	<i>Pirimiphos-methyl DEAMPY</i>	Sedaxane	<i>Trifloxystrobin CGA 321113</i>	
<i>Diflufenican AE-B107137</i>	Flusilazole	<i>Methiocarb sulfon</i>	<i>Pirimiphos-methyl-N-desethyl</i>	Spinetoram	zoxamid	
Dimethenamid (P)	Flutolanil	<i>Methiocarb sulfoxide</i>	Prochloraz	Spinosyn A		
Dimethoate	Fluxapyroxad	Methoxyfenozide	<i>Prochloraz BTS 44596</i>	Spinosyn D		
Dimethomorph	Foramsulfuron	Metobromuron	Prometryn			
LC-MS/MS ESI neg	2,4-D (free)	<i>Chlorothalonil 4-OH</i>	Fipronil	Fludioxonil	Meptyldinocap	<i>Pirimicarb desmethyl-</i>
	Bentazone	<i>Chlorpyrifos/-methyl: TCPy</i>	<i>Fipronil sulfone</i>	Fluroxypyr	<i>Meptyldinocap phenol</i>	<i>Pirimiphos-methyl-desmethyl</i>
	<i>Bixafen desmethyl</i>	<i>chlorpyrifos-methyl-desmethyl</i>	Fluazifop	MCPA	<i>Metolachlor ESA</i>	
	Bromoxynil		Fluazinam	Mecoprop	<i>Metolachlor OA</i>	
GC-MS/MS	bifenthrin	Cyfluthrin (beta-cyfluthrin)	DDE, o,p'	Dieldrin	lambda-Cyhalothrin	
	captan THPI (1,2,3,6-tetrahyd	Cypermethrin	DDT o,p'	Esfenvalerate	Lindane (gamma-HCH)	
	Chlorpropham	DDD o,p'	DDT p,p'	Fenvalerate	Permethrin	
	Chlorpyrifos	DDD p,p'	Deltamethrin	folpet PHI (Phthalimide, CAS: 85-4	tau-Fluvalinate	
	Chlorpyrifos-methyl	DDE p,p'	Dicloran	Hexachlorobenzene	Tetramethrin	
SRM	glyphosate	AMPA				

**v naboru
164 pesticidov
43 metabolitov**

Italic: metabolites

Kaj smo vzorčili?



Vzorčevanje: poletje 2021

Study protocol: Silva et al. 2021



Environmental samples:

10 x conventional, 10 x organic fields (from 12-20 farms) per case study site

 Soil samples - 1 per field (20/CSS)	 Water samples - 3-6 per CSS	 Plant samples - 1 per field (20/CSS)
 Sediment samples - 3-6 per CSS	 House dust samples - 1 per farmer household (12-20/CSS)	 Outdoor dust samples - 2 per CSS
 Fish samples - 3-6 per CSS	 Macroinvertebrate samples - 3 per CSS	 Earthworm samples (10 per field) - 200 per CSS
 Insect traps (3 repetitions in 10 farms) = 30 per CSS	 Bat faecal samples 3-5 per CSS	 Flying insects (3 repetitions in 10 farms) = 30 per CSS

Biological samples:

6 x conventional, 6 x organic fields (from 12-20 farms) per case study site

 Sheep, cattle, dairy or goats:

 Urine samples - 3 per farm	 Faecal samples - 3 per farm	 Blood samples - 3 per farm
 Wristbands - 3 per farm	 Feed samples - 1 per farm	 Milk samples - 1 per farm

 Cats

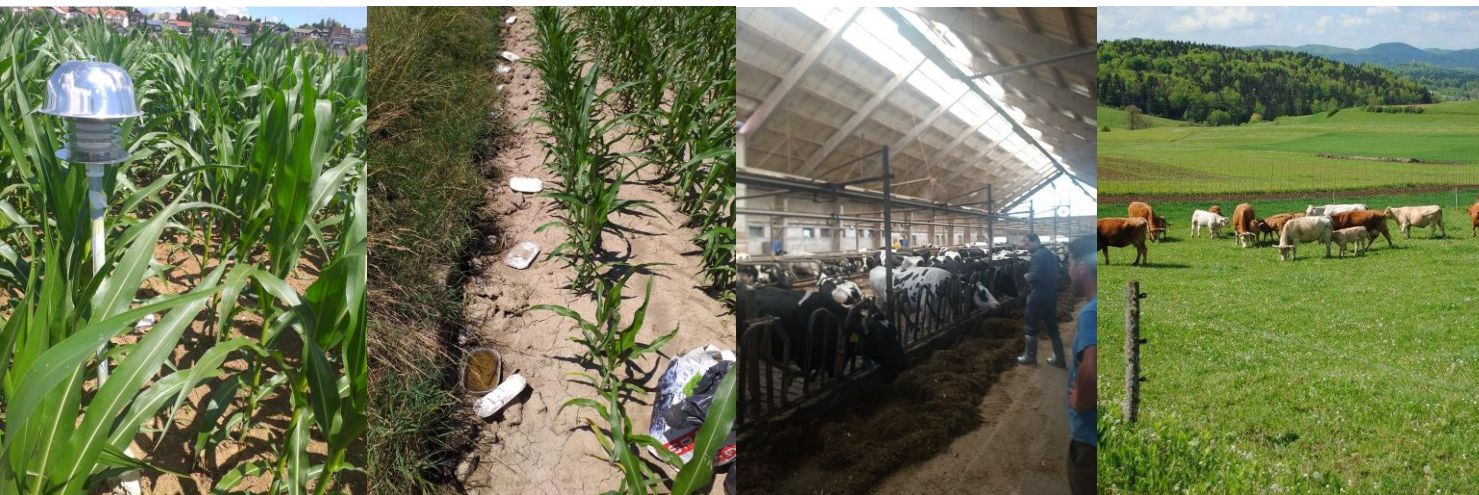

Faecal samples
- 1 per farm

Human subjects:

Farmers:
12 conventional, 12 organic
Neighbours:
12 conventional, 12 organic
Consumers:
12 conventional, 12 organic

 Nasal swab - 1 per participant	 Blood samples - 1 per participant
 Urine samples - 1 per participant	 Stool samples - 1 per participant
 Food and drink sample - 1 per participant	 Wristbands - 1 per participant

Raziskovalno območje Osrednja Slovenija – Koruza

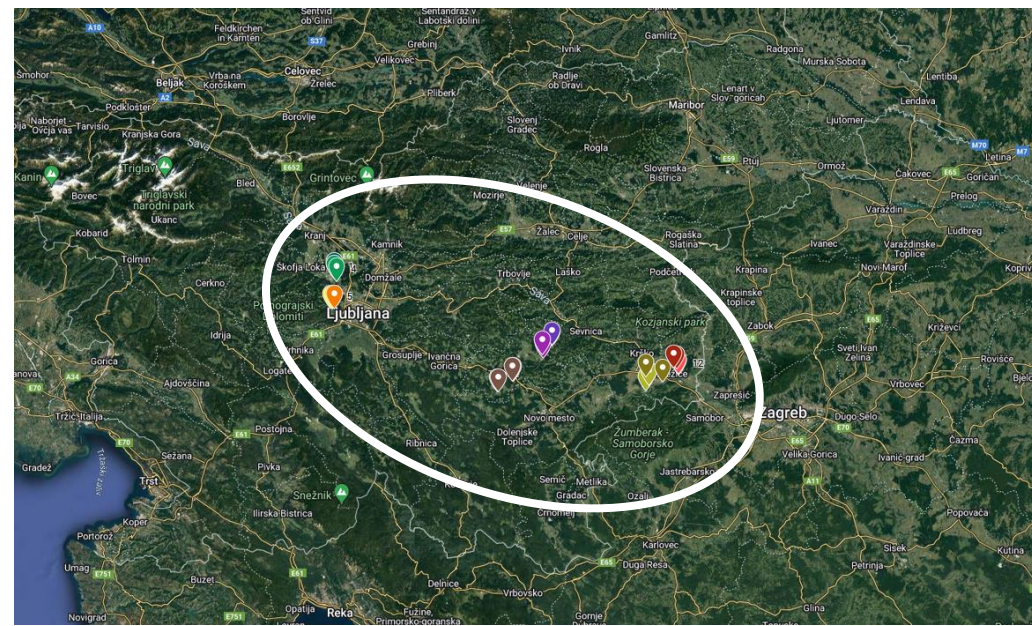


- 12 kmetij (6 konvencionalnih in 6 ekoloških)

- ✓ tla – sedimenti - voda – zrak
- ✓ krave – mačke – netopirji - insekti – ribe
- ✓ deževniki – nevretenčarji
- ✓ krma za krave
- ✓ pridelki

- Kmetje, sosedje, potrošniki (n=72, 36 moških in 36 žensk)

- ✓ kri – blato – urin – bris nosne sluznice – zapestnice
- ✓ Hišni prah
- ✓ hrana 24 ur (n=6)
- ✓ vprašalniki (obnašanje, prepričanja, delovanje)





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SUSTAINABLE PLANT PROTECTION TRANSITION



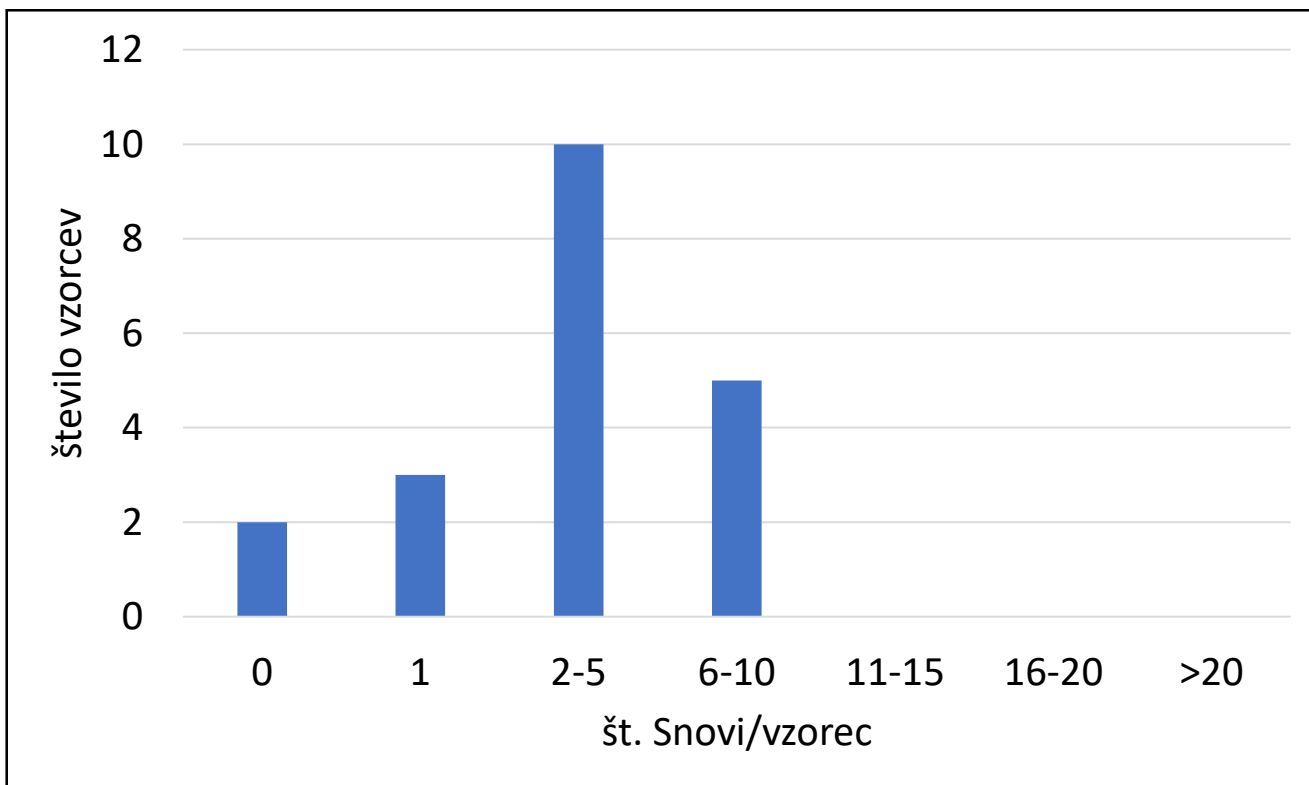
ANALIZE OKOLJE



European
Commission

Tla - Slovenija

- 20 vzorcev (10 eko/10 konv)
- 21 snovi zaznanih/192 analiziranih (11%)
- Mešanice: 0-8 snovi/vzorec

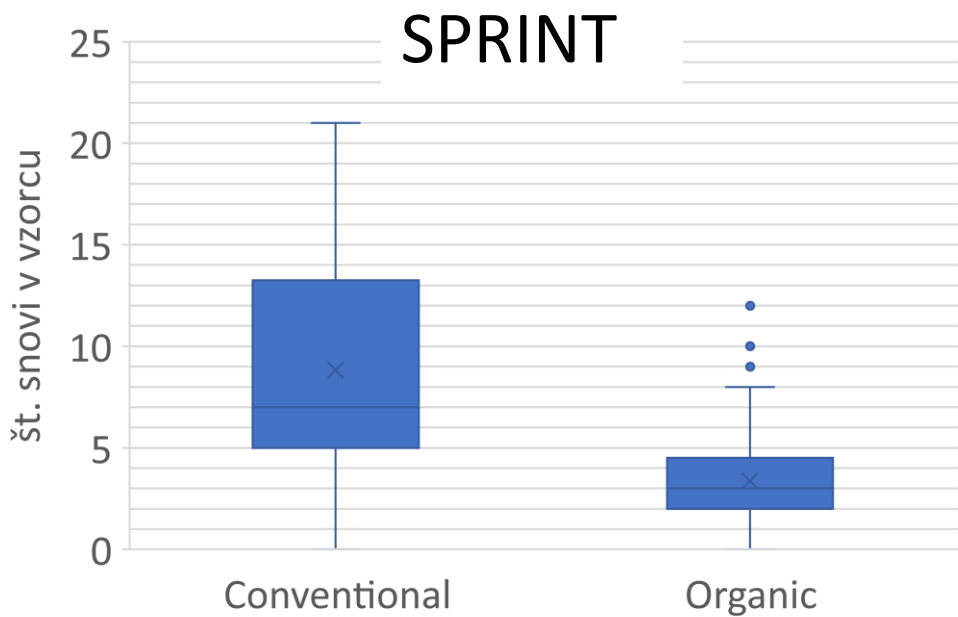
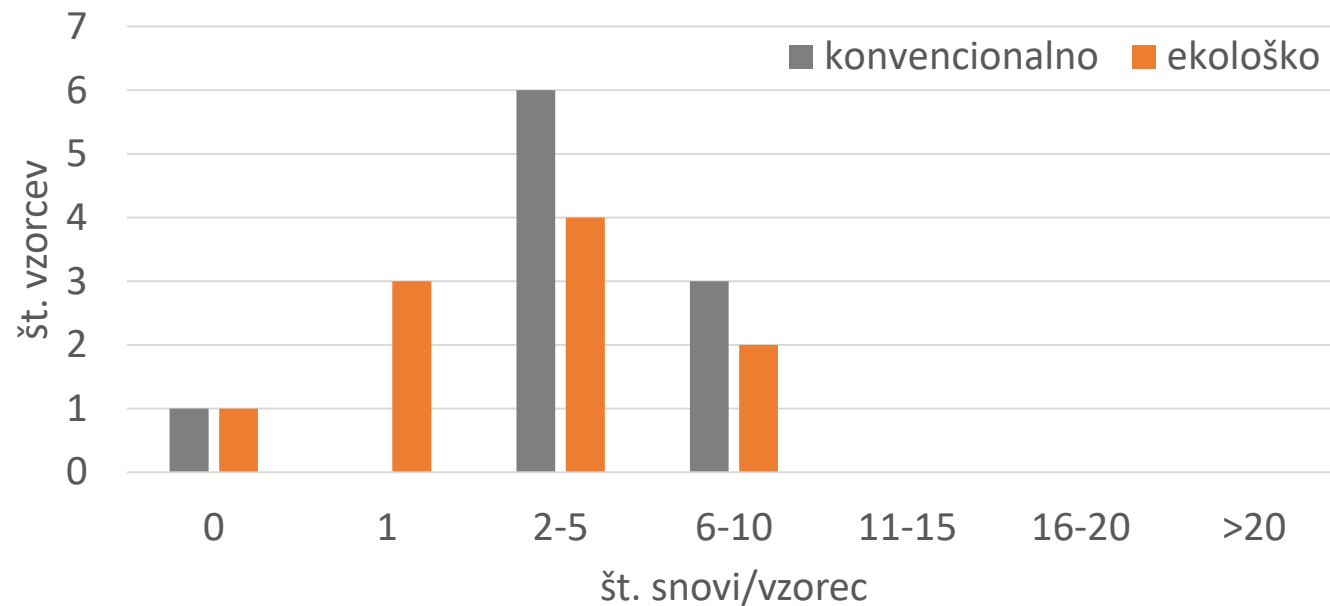


	compound	frequency	median concentration (ug/kg)
1	DDE p,p'	65%	5.6
2	Epoxiconazole	40%	3.45
3	Metolachlor_S	35%	22
4	Terbutylazine	25%	3.6
5	Chlorpyrifos	20%	7.2
6	Hexachlorobenzene	20%	0.7
7	Terbutylazine_desethyl	20%	2.6
8	AMPA	15%	24.4
9	Bixafen	15%	10
10	DDD p,p'	15%	1.2
11	DDT p,p'	15%	45.1
12	Metolachlor_ethane_sulfonic_acid	15%	6
13	Tebuconazole	15%	6.7
14	DDT o,p'	10%	1.35
15	Pendimethalin	10%	3.4
16	Cyantraniliprole	5%	4.7
17	Fenpropidin	5%	2.4
18	Fenpropimorph	5%	7
19	Fluopyram	5%	3.6
20	Fluxapyroxad	5%	2.7
21	Thiencarbazone_methyl	5%	43.5

Tla – Slovenija

ekološko : konvencionalno

Slovenija	KONV	EKO
Skupno število	19	15
Povprečno št. ostankov/vzorec	4	3
min št. ostankov/vzorec	0	0
max št. ostankov/vzorec	8	6



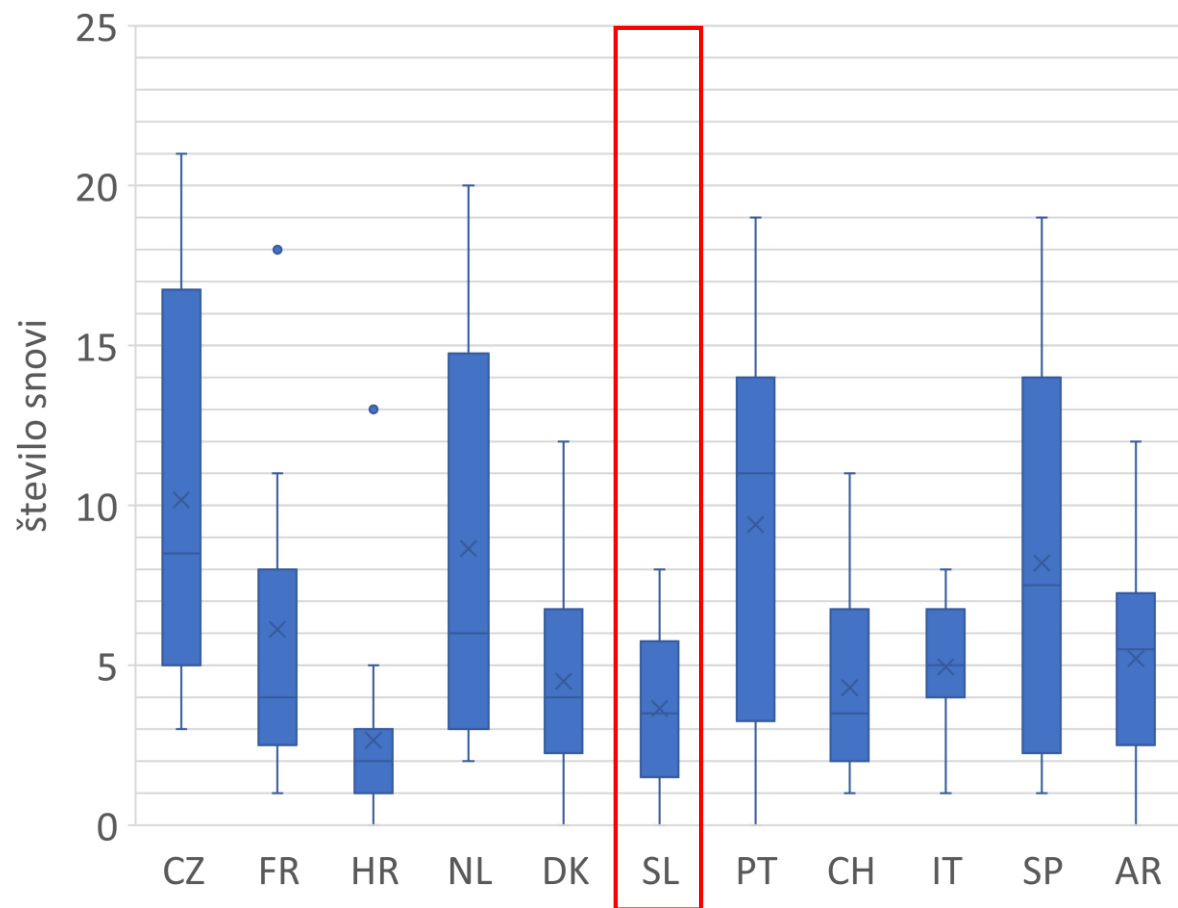
compound	konvencionalno		ekološko	
	frequency (%)	median concentration (ug/kg)	frequency	median concentration (ug/kg)
1 DDE p,p'	60%	6	70%	5.6
2 Metolachlor_S	50%	40.5	20%	12.75
3 Epoxiconazole	40%	2.8	40%	5.95
4 Terbutylazine	40%	5.25	10%	3.3
5 Chlorpyrifos	40%	7.2		
6 Terbutylazine_desethyl	30%	3	10%	2.1
7 Tebuconazole	30%	6.7		
8 Bixafen	20%	22.65	10%	10
9 DDD p,p'	20%	1.15	10%	4.6
10 Metolachlor_ethane_sulfonic_acid	20%	7.1	10%	4.9
11 Hexachlorobenzene	10%	0.4	30%	0.9
12 AMPA	10%	24.4	20%	44.95
13 DDT p,p'	10%	17.3	20%	51.15
14 DDT o,p'	10%	0.7	10%	2
15 Pendimethalin	10%	4	10%	2.8
16 Cyantraniliprole	10%	4.7		
17 Fenpropidin	10%	2.4		
18 Fluopyram	10%	3.6		
19 Thiencarbazone_methyl	10%	43.5		
20 Fenpropimorph			10%	7
21 Fluxapyroxad			10%	2.7

TLA – projekt SPRINT

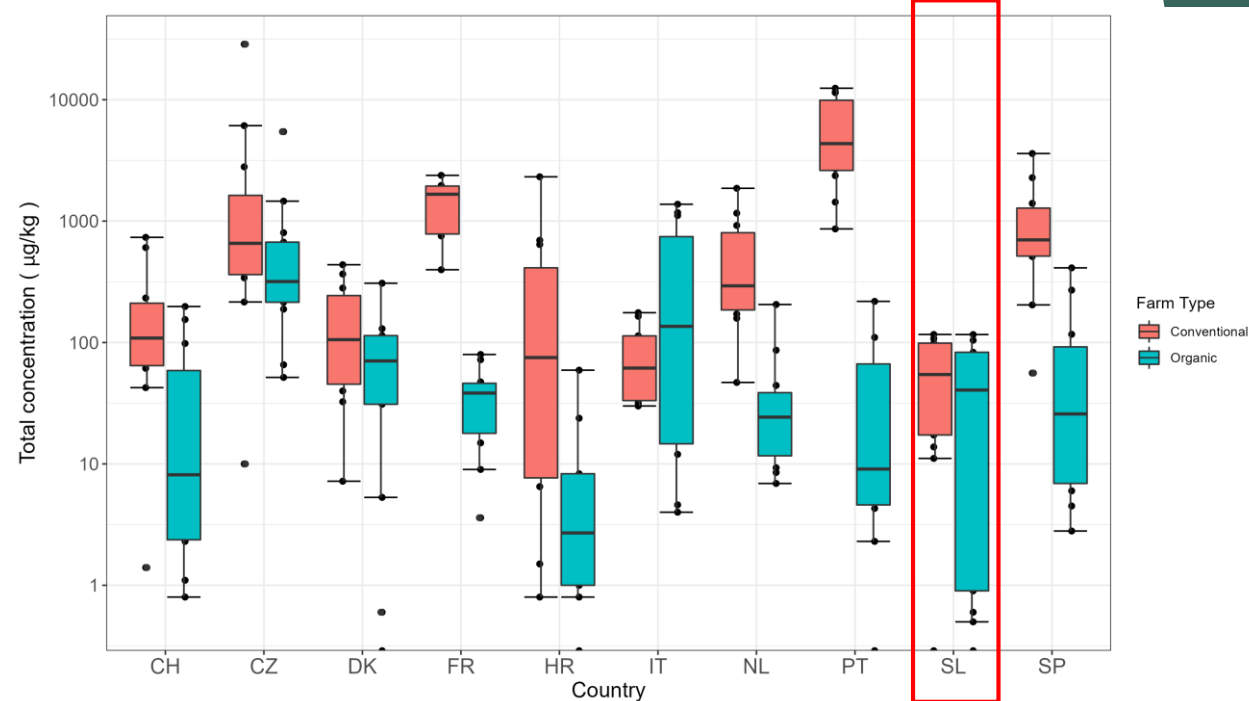
SLO: 0-8 snovi/vzorec

SPRINT: 0-21

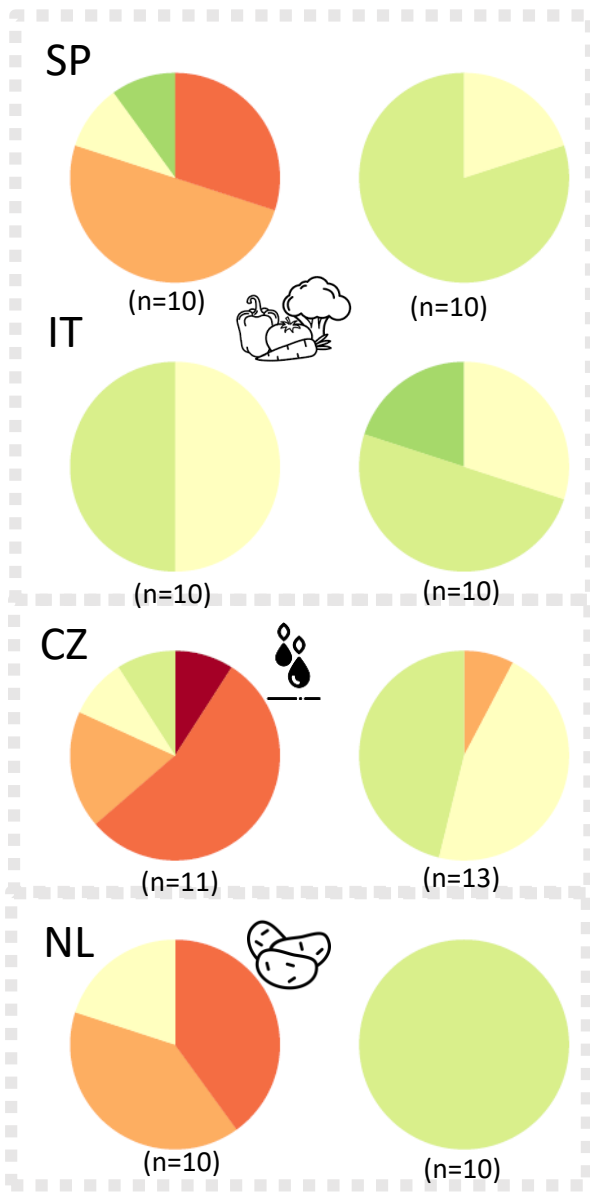
Število snovi v tleh



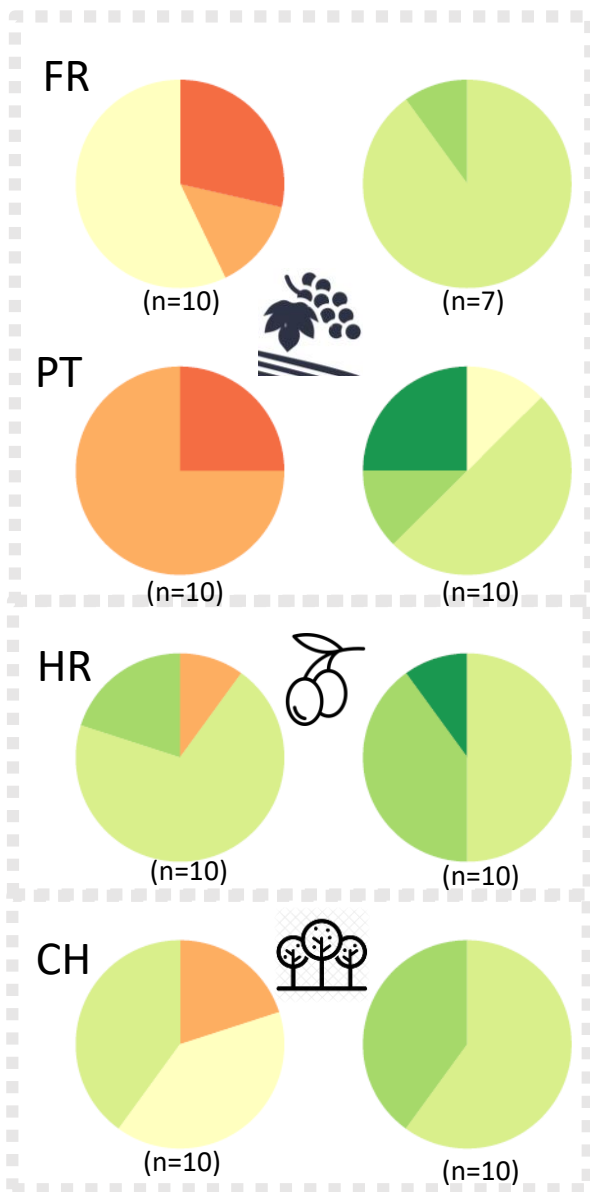
Skupna vsebnost snovi v tleh



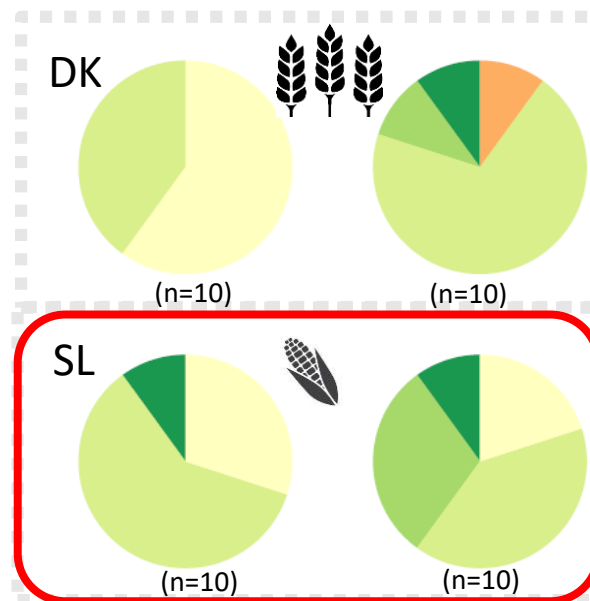
Konvencionalno Ekološko



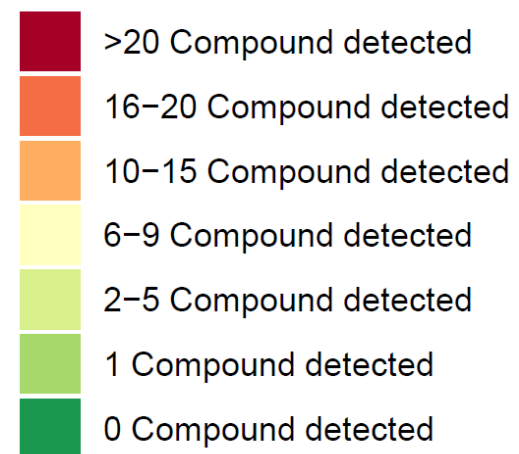
Konvencionalno Ekološko



Konvencionalno Ekološko

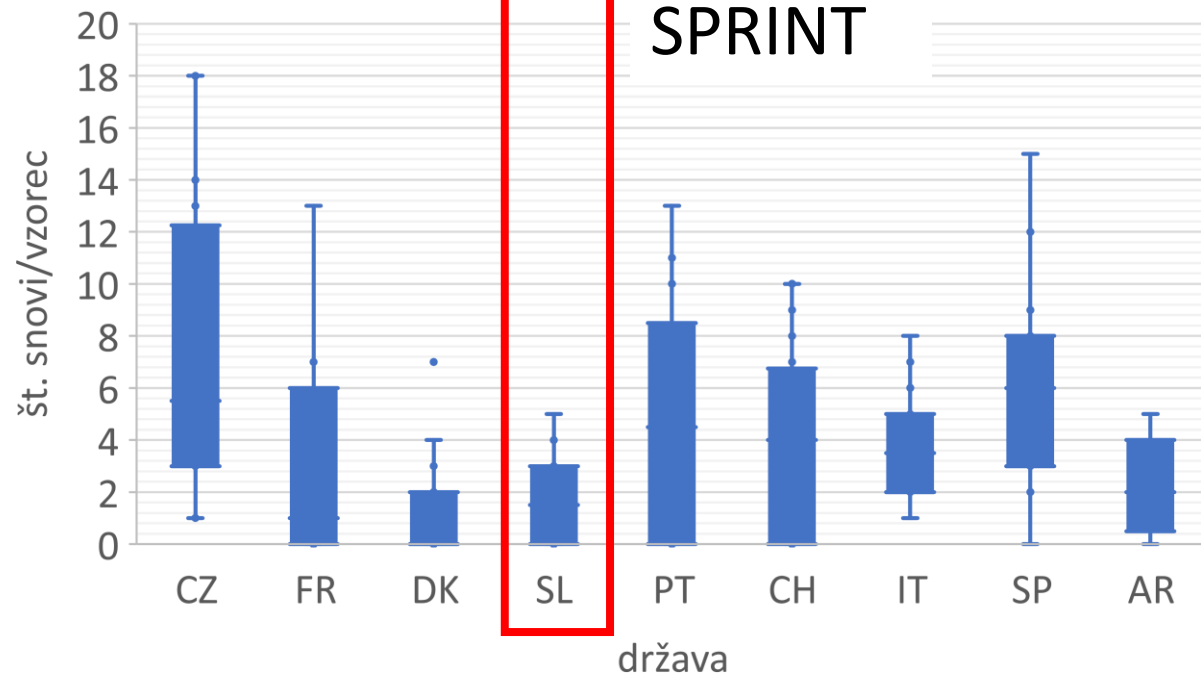
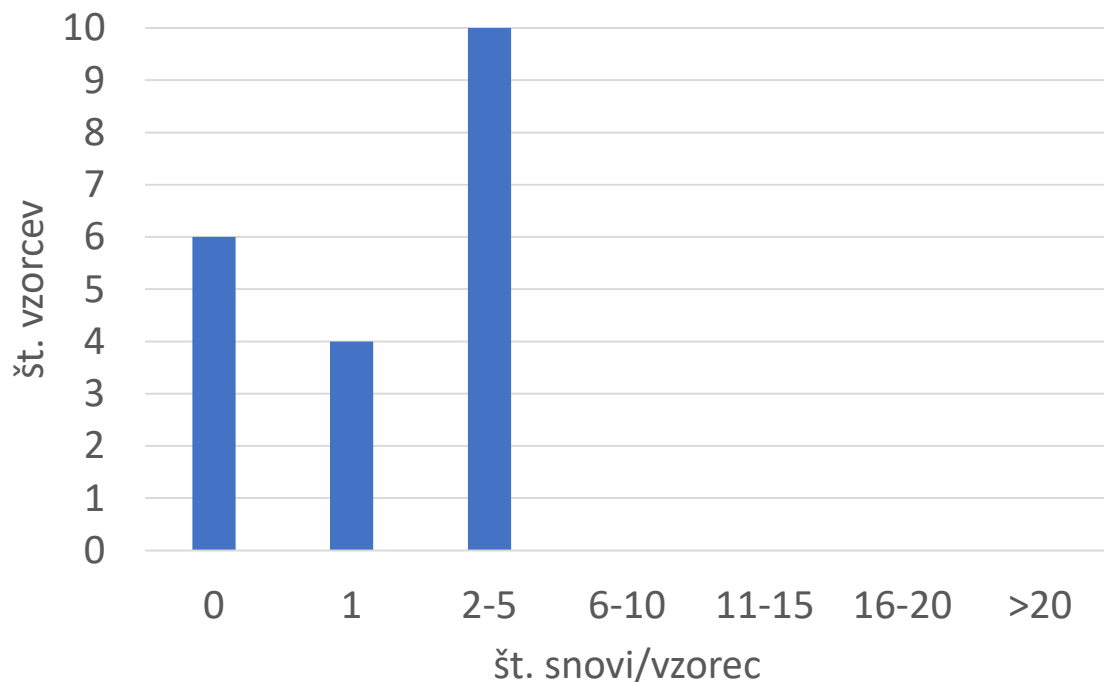


Category



Deževniki - Slovenija

- 20 vzorcev
- 10 snovi zaznanih
- SLO: 0-5 snovi/vzorec
- SPRINT: 0-18

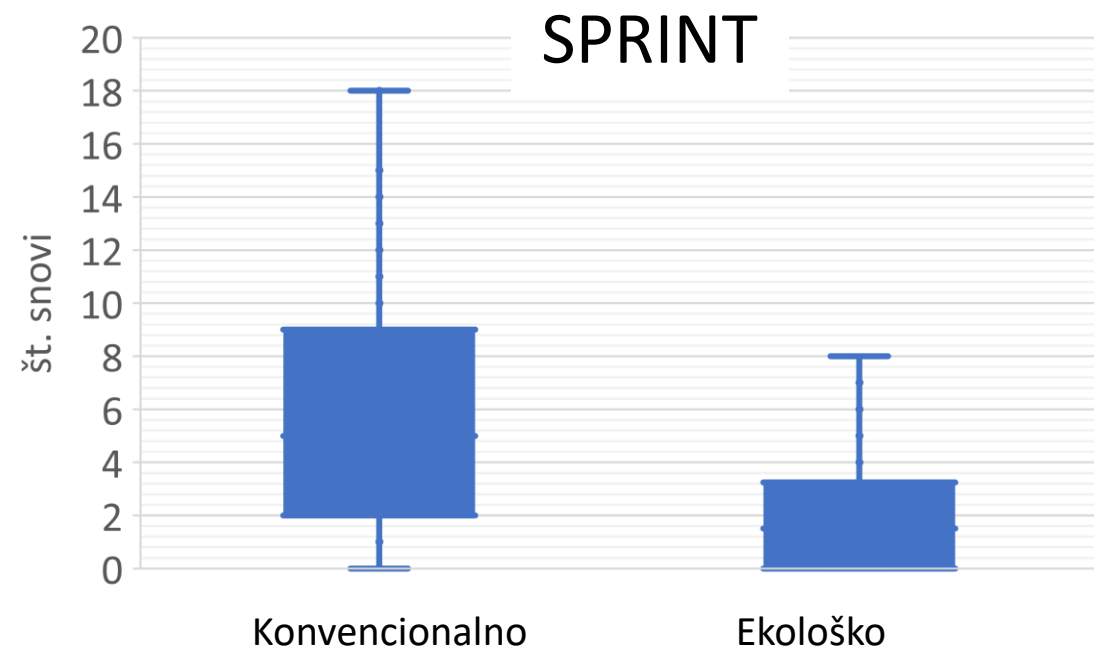
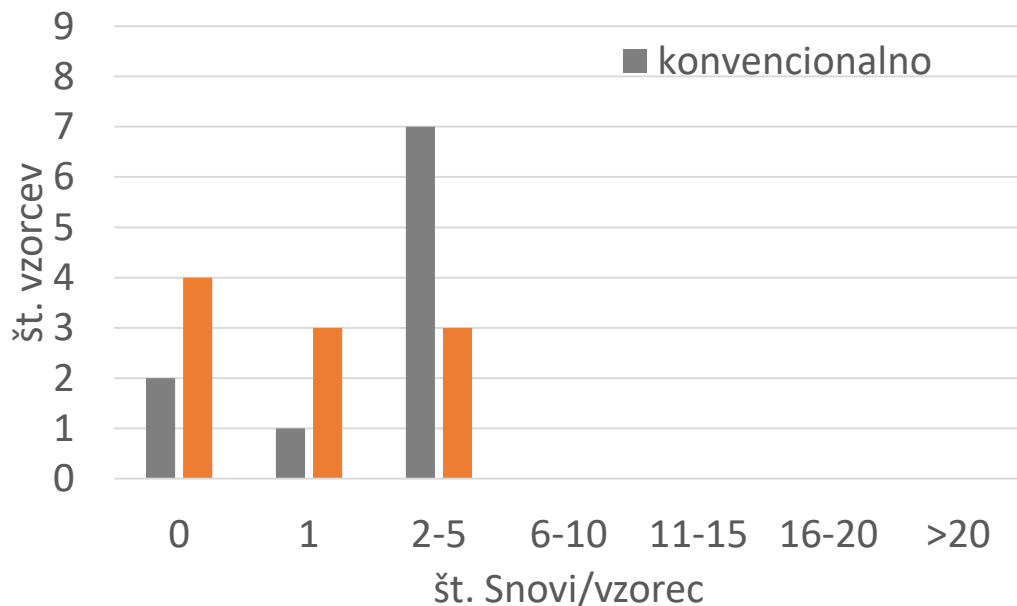


	compound	frequency (%)	concentration (ug/kg)
1	Metolachlor_ethane_sulfonic_acid	60%	133.82
2	Imidacloprid	30%	37.21
3	Thiacloprid	20%	51.32
4	Clothianidin	15%	87.11
5	DDE p,p'	15%	7.60
6	Nicosulfuron	15%	24.76
7	Terbutylazine_desethyl	10%	20.23
8	Bixafen	5%	72.57
9	Terbutylazine	5%	60.26
10	Tetraconazole	5%	76.60

Deževniki - Slovenija

ekološko : konvencionalno

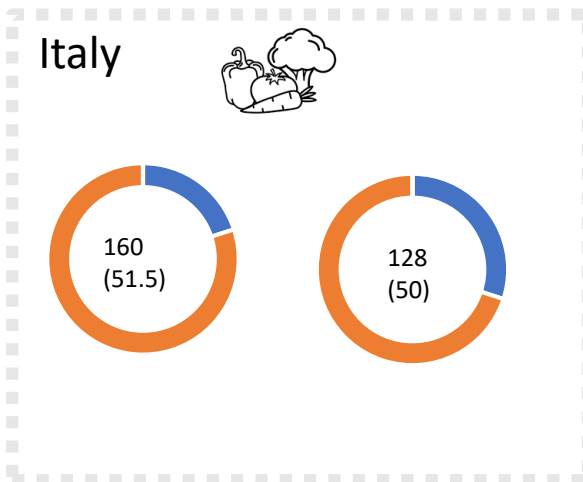
	KONV	EKO
Skupno število	10	4
Povprečno št. ostankov/vzorec	3	1
min št. ostankov/vzorec	0	0
max št. ostankov/vzorec	5	3



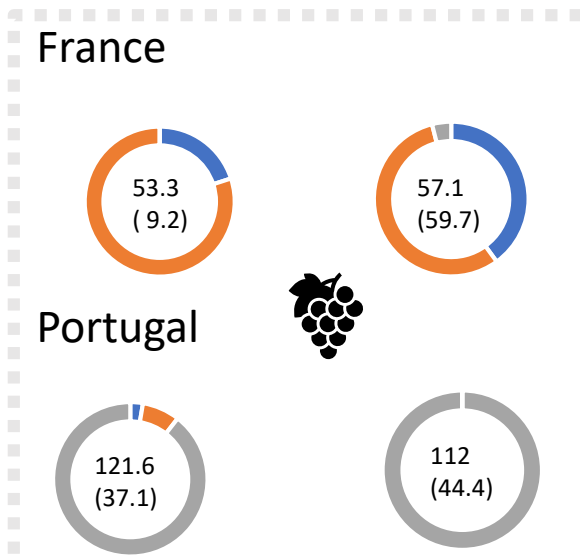
compound	konvencionalno		ekološko	
	frequency (%)	concentration (ug/kg)	frequency	concentration (ug/kg)
1 Metolachlor_ethane_sulfonic_acid	60%	2244.43	60%	90.16
2 Imidacloprid	40%	42.30	20%	33.68
3 Thiacloprid	40%	51.32		
4 DDE p,p'	30%	7.60		
5 Nicosulfuron	30%	24.76		
6 Clothianidin	20%	109.93	10%	73.21
7 Terbutylazine_desethyl	10%	18.46	10%	21.99
8 Bixafen	10%	72.57		
9 Terbutylazine	10%	60.26		
10 Tetraconazole	10%	76.60		

Deževniki – Številčnost (osebkov/m²)

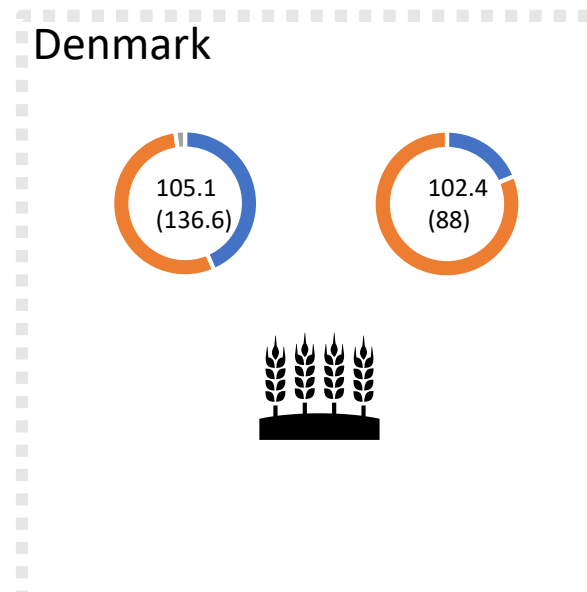
Konvencionalno Ekološko




Konvencionalno Ekološko




Konvencionalno Ekološko



 Endogeic – živijo v tleh

 Epigeic – živijo v rastlinskih ostankih

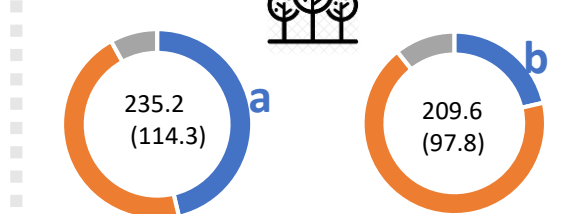
 Anecic – gradijo stalne globoke navpične kanale, ki jih uporabljajo za obisk površine,

a>b, different letters indicate significant differences (p<0,5) among ecological categories

The Czech Republic



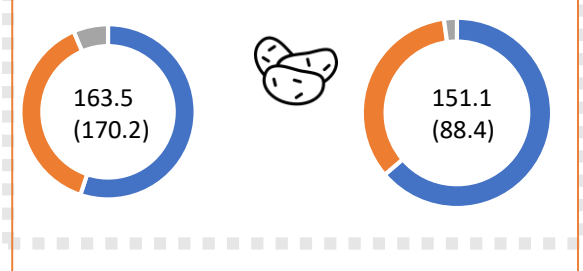
Switzerland 



Slovenia 



The Netherlands

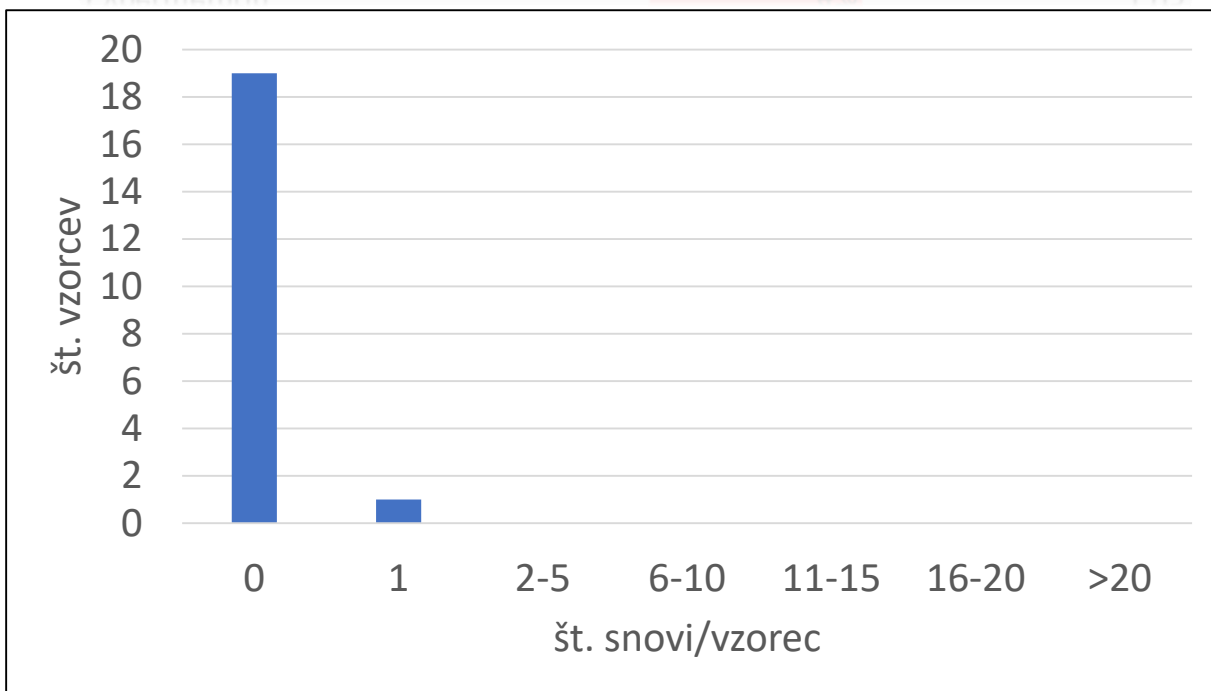


Courtesy
Esperanza Lwanga

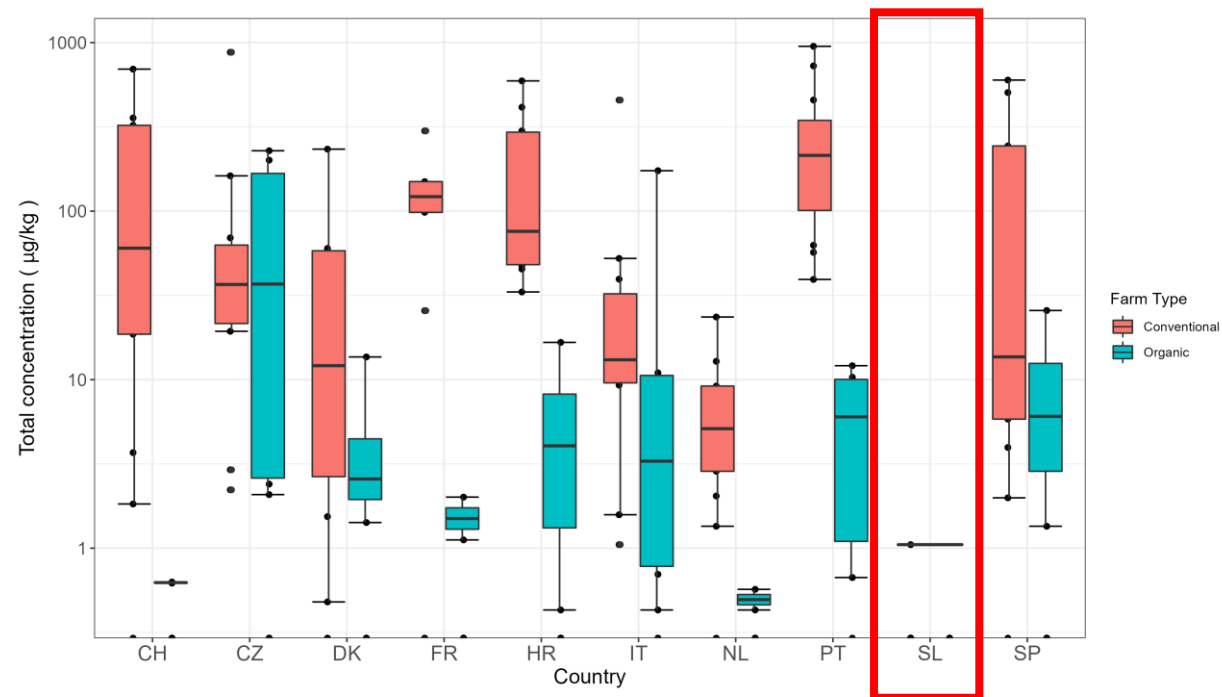
Rastline - Slovenija

- 20 vzorcev koruzno zrnje
- SLO: 1 snov zaznana/192 testiranih (v konvencionalnem vzorcu)
- SPRINT: 0-18 snovi

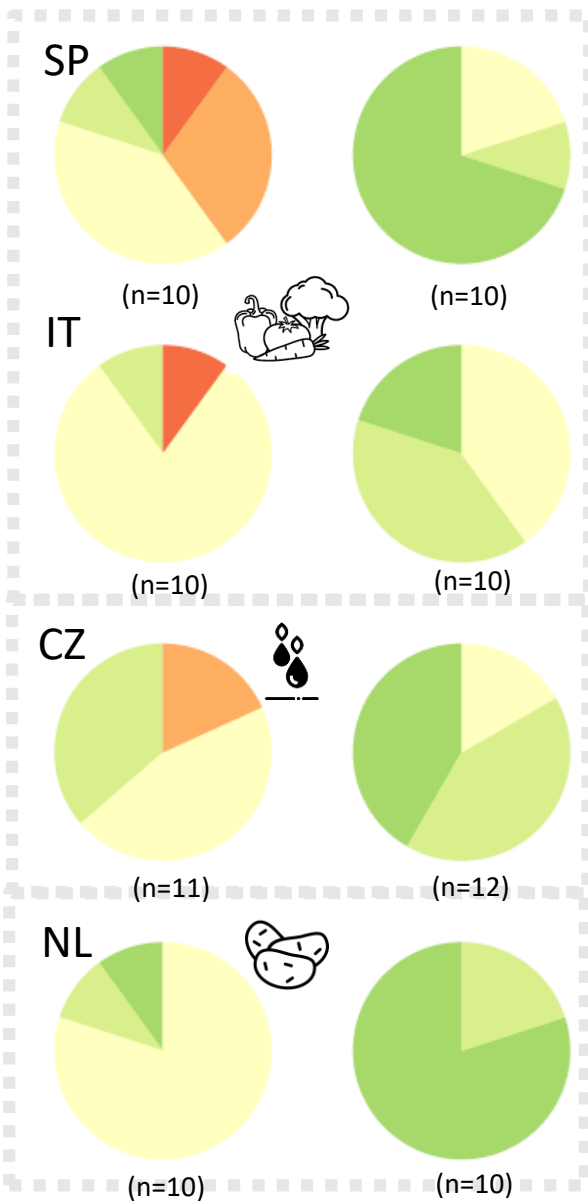
compound	frequency (%)	concentration (ug/kg)
Cypermethrin	4%	1.05



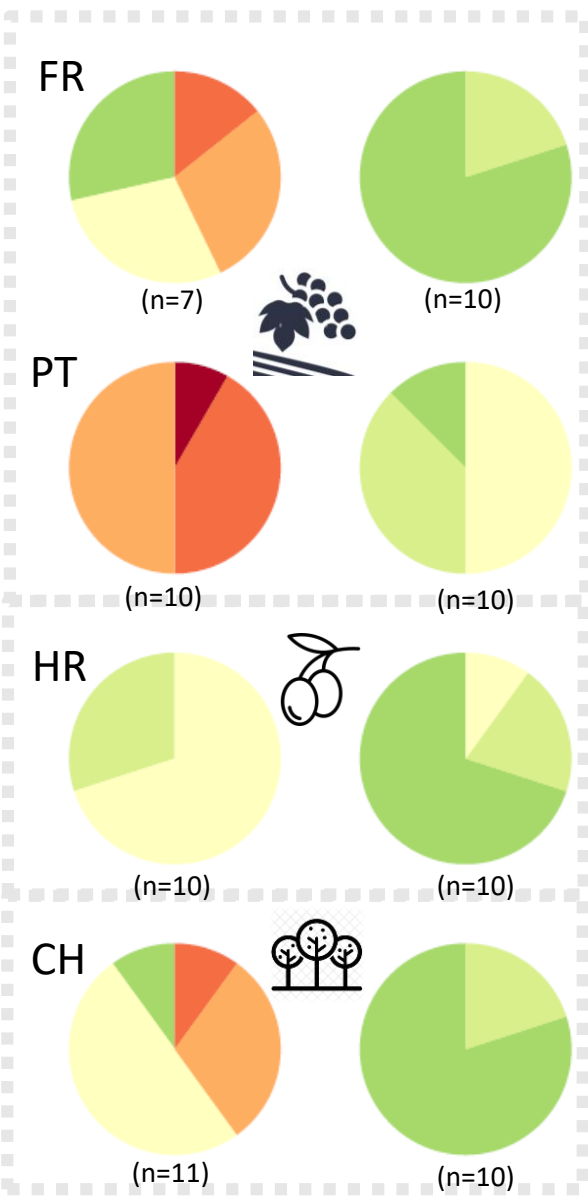
SPRINT



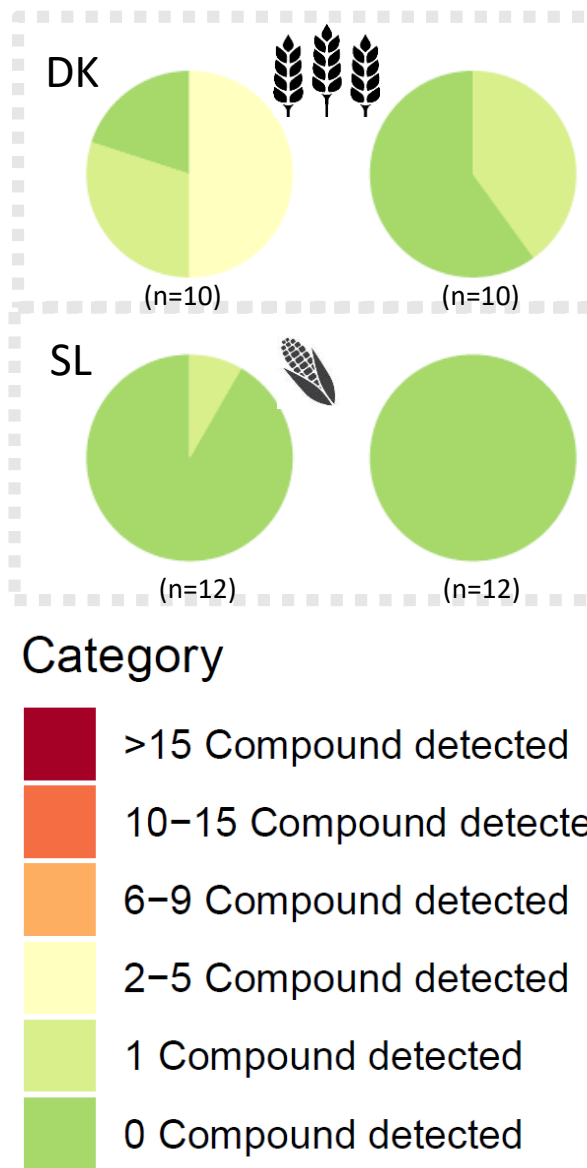
Konvencionalno Ekološko



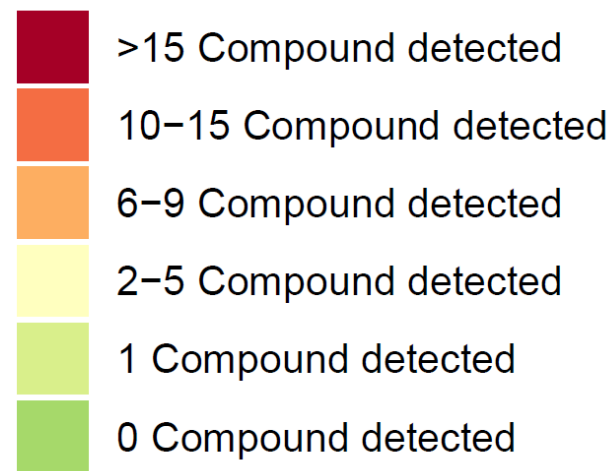
Konvencionalno Ekološko



Konvencionalno Ekološko

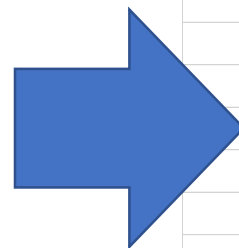


Category

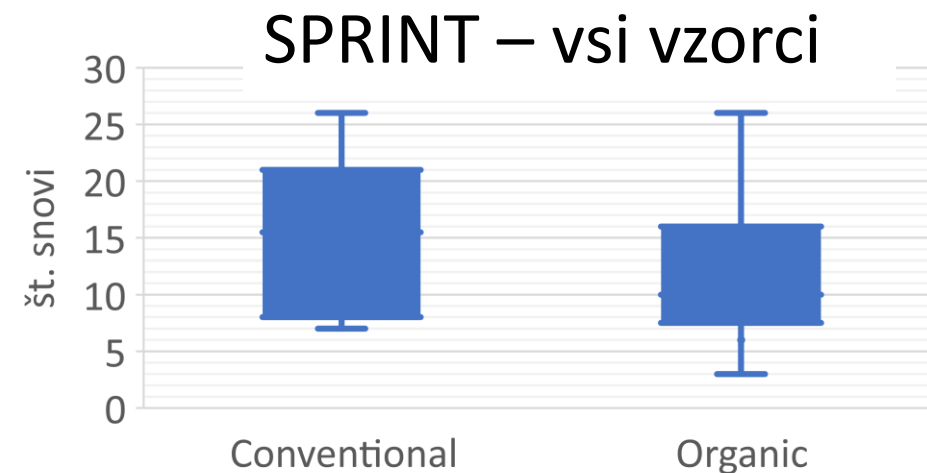
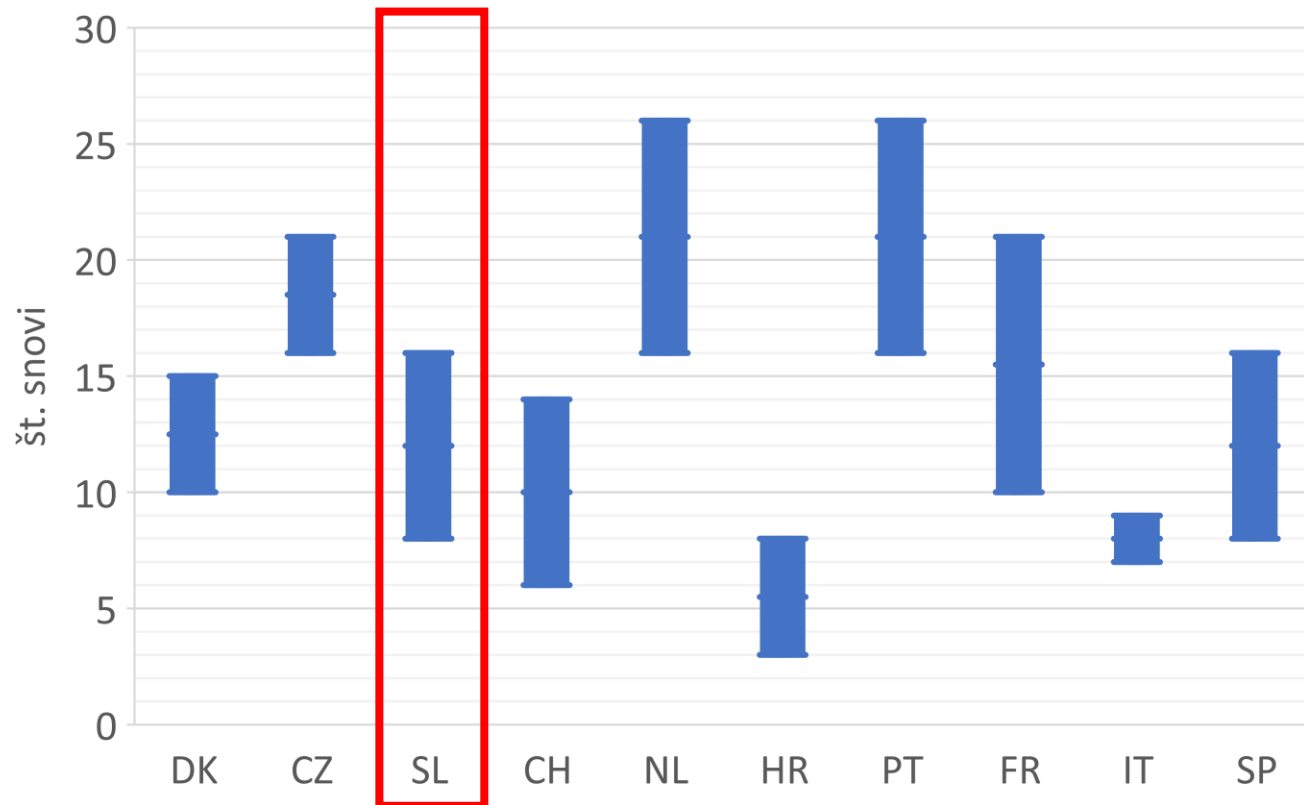


Delci v zraku – veter - TIEM

- 2 vzorčni mesti (postavljeni na njivah)
- 17 snovi zaznanih/160 testiranih
- SLO: Konv - 21 snovi; Eko: 16 snovi
- SPRINT: Konv – 6-26; Eko: 3-26

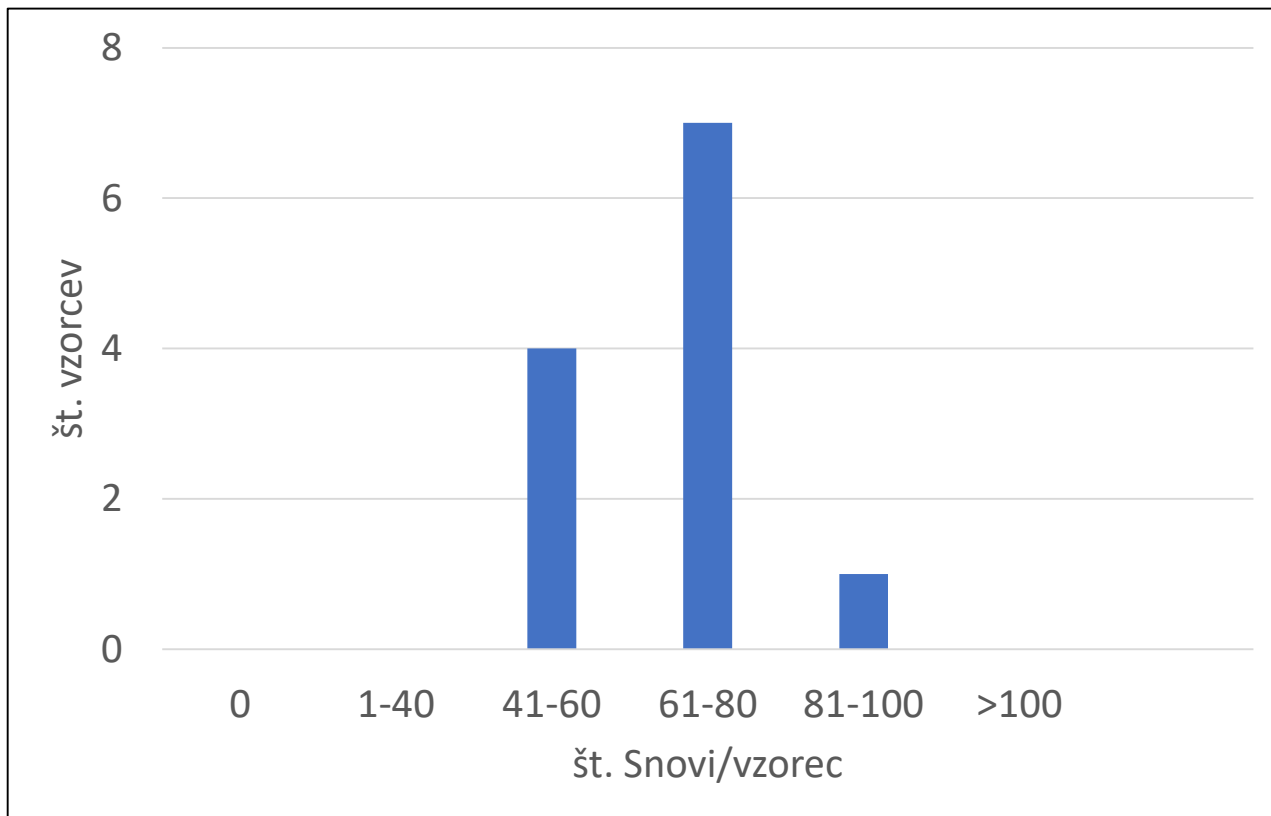


		Medvode	Brežice
		Konvencionalno	Ekološko
	compound	ng/sampler	ng/sampler
1	Terbutylazine_desethyl	12.5	15.7
2	Terbutylazine	22.4	21.9
3	Prosulfocarb	23.3	-
4	Pendimethalin	32.3	87.4
5	Folpet	36.1	189
6	Glyphosate	47.3	25
7	Folpet_PHI	77.5	92.2
8	Metolachlor_S	209.2	176.1
9	AMPA	-	8.1
10	Spirotetramat	-	12.3
11	Tetraconazole	-	13
12	Metalaxyl_M	-	14.6
13	Cyprodinil	-	21.4
14	Tebuconazole	-	24.2
15	Fenpropimorph	-	28.9
16	Pirimicarb	-	33.7
17	Prothioconazole_desthio	-	44.9



Hišni prah – kmetije - SLO

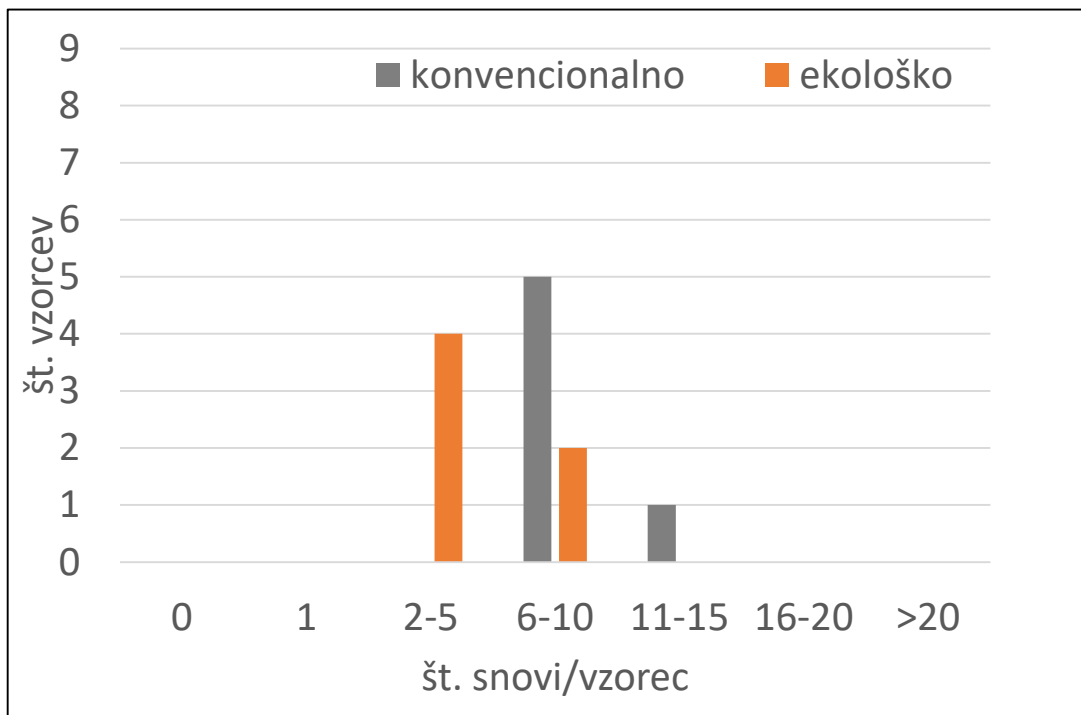
- 12 vzorcev
- 153 snovi zaznanih
- SLO: 48-95 snovi/vzorec
- SPRINT: 25-108 snovi/vzorec



	compound	frequency (%)	concentration (ug/kg)
1	Acetamiprid	100%	10.03
2	Azoxystrobin	100%	18.41
3	Bentazone	100%	1.82
4	Carbendazim	100%	36.33
5	Chlorpyrifos/-methyl: TCPy	100%	0.79
6	Dicamba	100%	42.16
7	Dimethomorph	100%	10.16
8	Fipronil	100%	3.06
9	Fipronil sulfone	100%	1.21
10	Fludioxonil	100%	5.06
11	Fluopyram	100%	2.92
12	Fluxapyroxad	100%	0.67
13	Hexachlorobenzene	100%	0.29
14	Imidacloprid	100%	32.00
15	Imidacloprid (desnitro-)	100%	2.35
16	Lindane	100%	0.91
17	Permethrin	100%	317.61
18	Piperonyl butoxide	100%	168.28
19	Propamocarb (hydrochloride)	100%	0.77
20	Propiconazole	100%	53.02
21	Tebuconazole	100%	16.09
22	Thiabendazole	100%	19.00
23	Thiacloprid	100%	11.45
24	Tolyfluanid metabolite DMST	100%	1.43
25	Chloridazon	92%	4.22
26	Chlorothalonil 4-hydroxy	92%	0.77
27	DDE p,p'	92%	2.77
28	Difenoconazole	92%	4.61
29	Diuron	92%	0.73
30	Fluroxypyr	92%	10.14
31	Mandipropamid	92%	1.25
32	Mecoprop (P)	92%	6.59
33	Metalaxyl_M	92%	6.84
34	Metolachlor_S	92%	3.34
35	Thiamethoxam	92%	2.71
36	Pendimethalin	83%	4.00
37	Cyantraniliprole	75%	11.42
38	Pirimiphos-methyl DEAMPY	75%	1.16

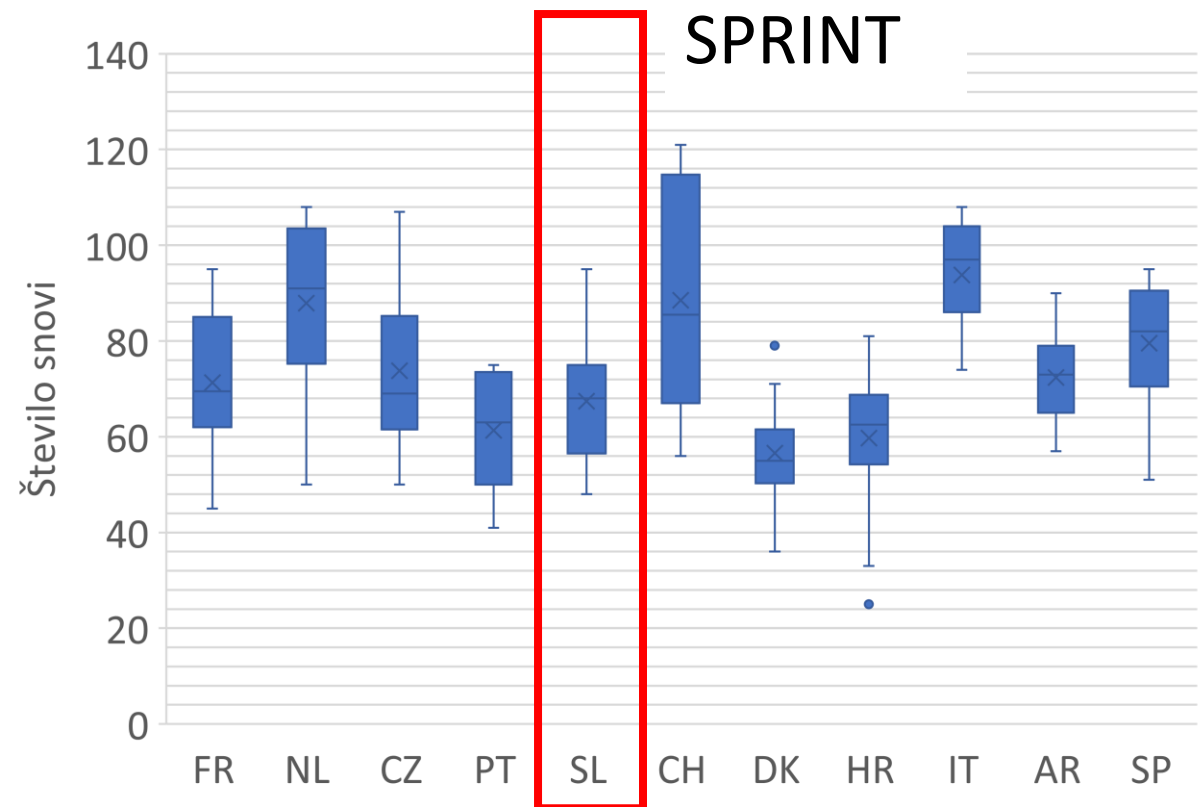
Hišni prah – kmetije - SLO

	KONV	EKO
Skupno število	141	105
Povprečno št. ostankov/vzorec	76	59
min št. ostankov/vzorec	68	48
max št. ostankov/vzorec	95	75



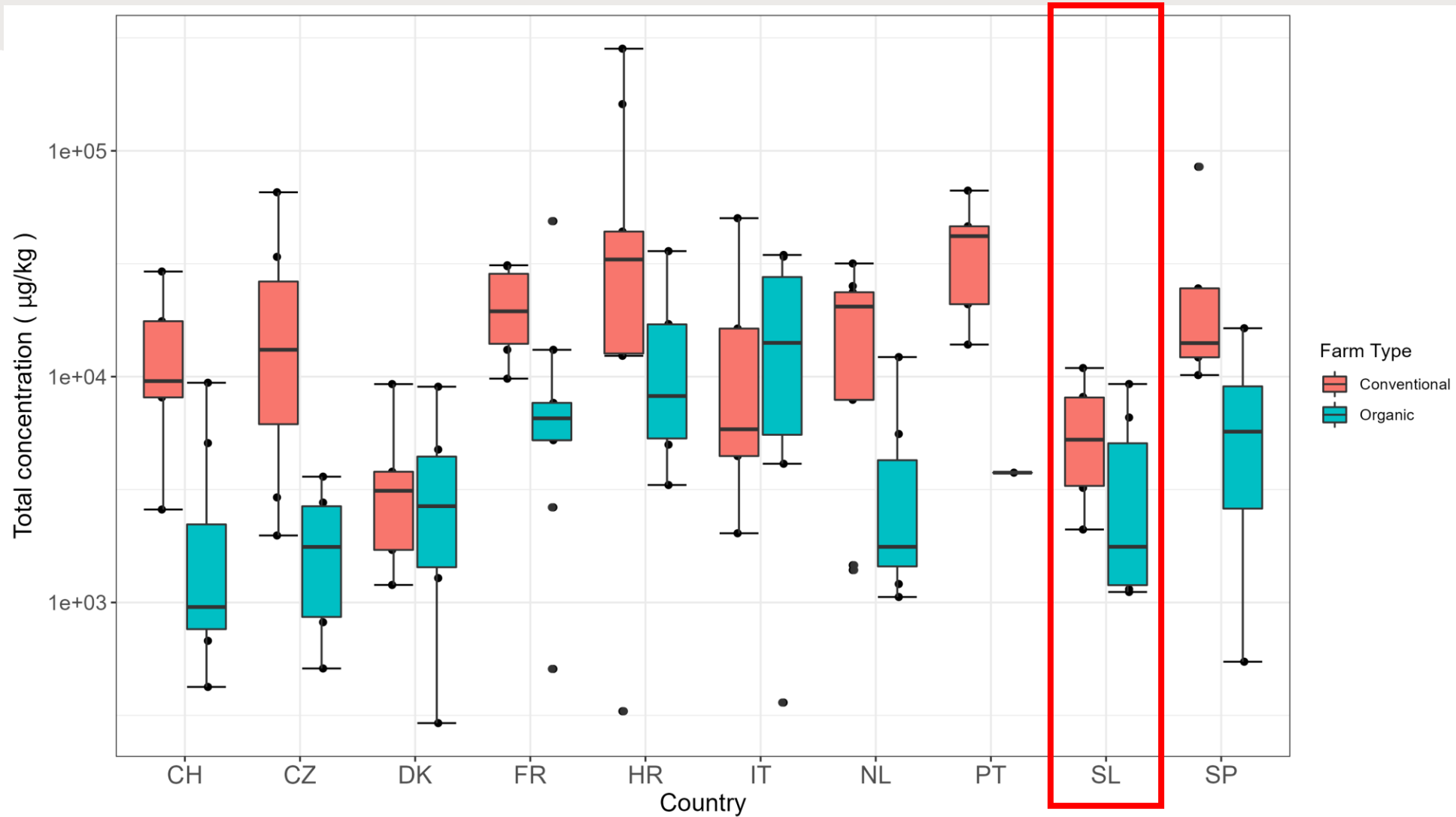
compound	conventional		organic	
	frequency (%)	concentration (ug/kg)	frequency (%)	concentration (ug/kg)
1 Acetamidrid	100%	13.22	100%	3.92
2 Azoxystrobin	100%	19.85	100%	13.64
3 Bentazone	100%	1.82	100%	1.86
4 Carbendazim	100%	35.52	100%	47.01
5 Chlorpyrifos/-methyl: TCPy	100%	4.69	100%	0.58
6 Dicamba	100%	44.99	100%	42.16
7 Dimethomorph	100%	10.36	100%	6.66
8 Fipronil	100%	5.25	100%	1.67
9 Fipronil sulfone	100%	1.21	100%	1.35
10 Fludioxonil	100%	5.06	100%	5.82
11 Fluopyram	100%	2.92	100%	3.47
12 Fluxapyroxad	100%	1.08	100%	0.28
13 Hexachlorobenzene	100%	0.29	100%	0.27
14 Imidacloprid	100%	34.87	100%	17.70
15 Imidacloprid (desnitro-)	100%	2.62	100%	1.90
16 Lindane	100%	0.99	100%	0.89
17 Permethrin	100%	317.61	100%	456.00
18 Piperonyl butoxide	100%	168.28	100%	226.49
19 Propamocarb (hydrochloride)	100%	0.69	100%	0.88
20 Propiconazole	100%	36.85	100%	76.77
21 Tebuconazole	100%	16.25	100%	16.09
22 Thiabendazole	100%	14.68	100%	19.36
23 Thiacloprid	100%	57.08	100%	2.68
24 Tolyfluanid metabolite DMST	100%	1.55	100%	1.17
25 Chloridazon	100%	3.60	83%	4.22
26 Chlorothalonil 4-hydroxy	100%	0.69	83%	1.34
27 Difenconazole	100%	8.40	83%	2.34
28 Fluroxypyr	100%	11.05	83%	10.14
29 Mecoprop (P)	100%	7.33	83%	4.51
30 Metalaxyl_M	100%	8.29	83%	3.65
31 Metolachlor_S	100%	33.20	83%	1.40
32 Azoxystrobin_O_demethyl	100%	5.14	33%	12.21
33 Metolachlor_ethane_sulfonic_acid	100%	4.21	33%	3.54
34 Prochloraz BTS 44595	100%	1.89	17%	1.81

35	DDE p,p'	83%	2.77	100%	2.05
36	Diuron	83%	1.18	100%	0.61
37	Mandipropamid	83%	1.25	100%	1.27
38	Thiamethoxam	83%	33.74	100%	1.79
39	Cyantraniliprole	83%	56.58	67%	4.01
40	Pirimiphos-methyl DEAMPY	83%	0.28	67%	1.35
41	D2_4	83%	15.71	50%	4.24
42	Cymoxanil	83%	0.31	50%	0.93
43	Glyphosate	83%	1534.27	33%	141.07
44	Metalaxyl_CGA62826	83%	1.87	33%	2.75
45	Diflufenican	83%	5.28	17%	1.06
46	Pendimethalin	67%	7.00	100%	3.33
47	Dieldrin	67%	0.31	67%	0.28
48	Iprovalicarb	67%	1.90	67%	2.17
49	Pirimicarb	67%	3.98	67%	1.04
50	Flonicamid	67%	0.67	50%	5.86
51	Flupyradifurone	67%	1.77	50%	2.03
52	Propoxur	67%	5.57	50%	1.44
53	Acetamiprid_N_desmethyl	67%	2.64	33%	0.88
54	Dimethenamid_P	67%	4.24	17%	1.16
55	Imazalil	67%	43.87	17%	100.83
56	Terbutylazine	67%	8.56	17%	0.33
57	Clothianidin	67%	2.97		
58	Nicosulfuron	67%	51.44		
59	Terbutryn	50%	8.43	83%	9.86
60	Ametoctradin	50%	5.91	67%	3.53
61	Folpet_PHI	50%	479.27	67%	38.37
62	DDD p,p'	50%	0.72	50%	0.71
63	Isoproturon	50%	0.43	50%	0.25
64	Pymetrozine	50%	0.30	50%	0.23
65	Cypermethrin	50%	402.52	33%	93.54
66	Florasulam	50%	0.27	33%	1.55
67	Metrafenone	50%	6.22	33%	12.58
68	Epoxiconazole	50%	2.33	17%	20.47
69	Methiocarb	50%	20.14	17%	2.65
70	Metolachlor_oxanilic_acid	50%	12.40	17%	1.69
71	Pirimicarb_desmethyl	50%	0.34	17%	0.38
72	Prosulfocarb	50%	3.80	17%	0.91
73	Prothioconazole_desthio	50%	11.36	17%	1.89
74	Pyraclostrobin	50%	12.12	17%	8.12
75	Pyrimethanil	50%	3.32	17%	3.58
76	Spirotetramat_enol	50%	1.14	17%	2.16
77	Terbutylazine_desethyl	50%	2.03	17%	0.52
78	Chlorotoluron	50%	1.66		
79	Metconazole	50%	12.17		
80	Sedaxane	50%	1.75		



Hišni prah – kmetije - SPRINT

Skupna vsebnost snovi (Total concentration—indoor dust)

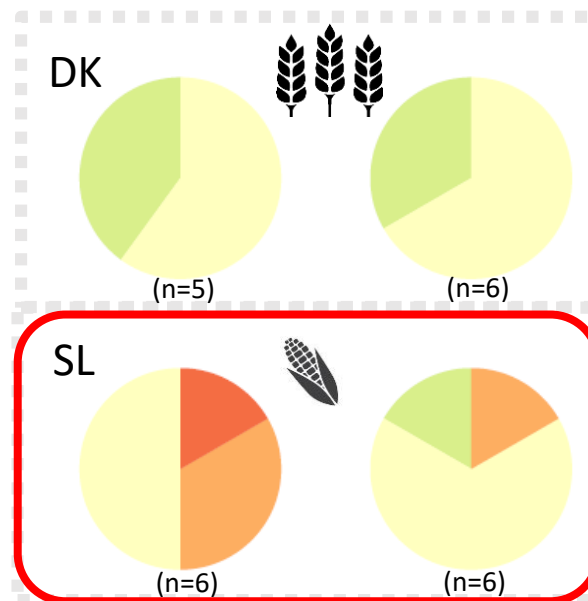
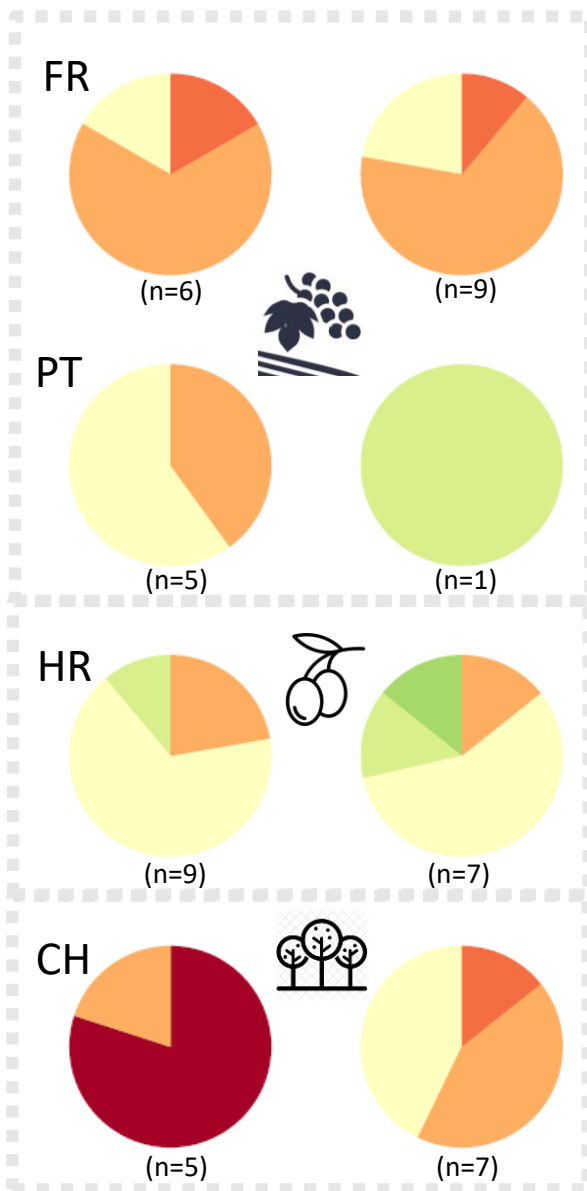
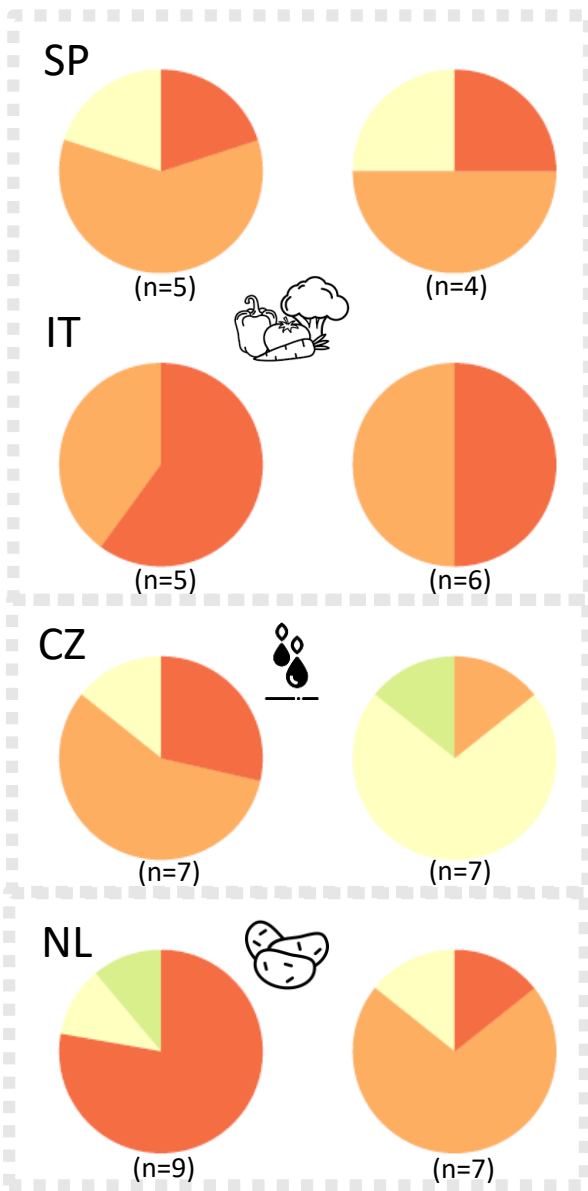


Konvencionalno Ekološko

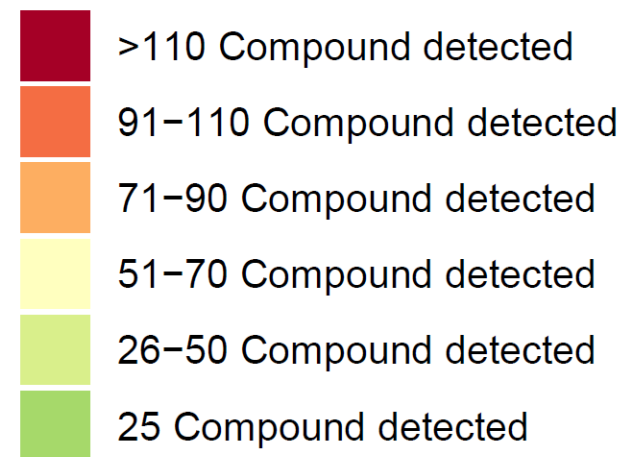
Konvencionalno Ekološko

Konvencionalno Ekološko

Hišni prah

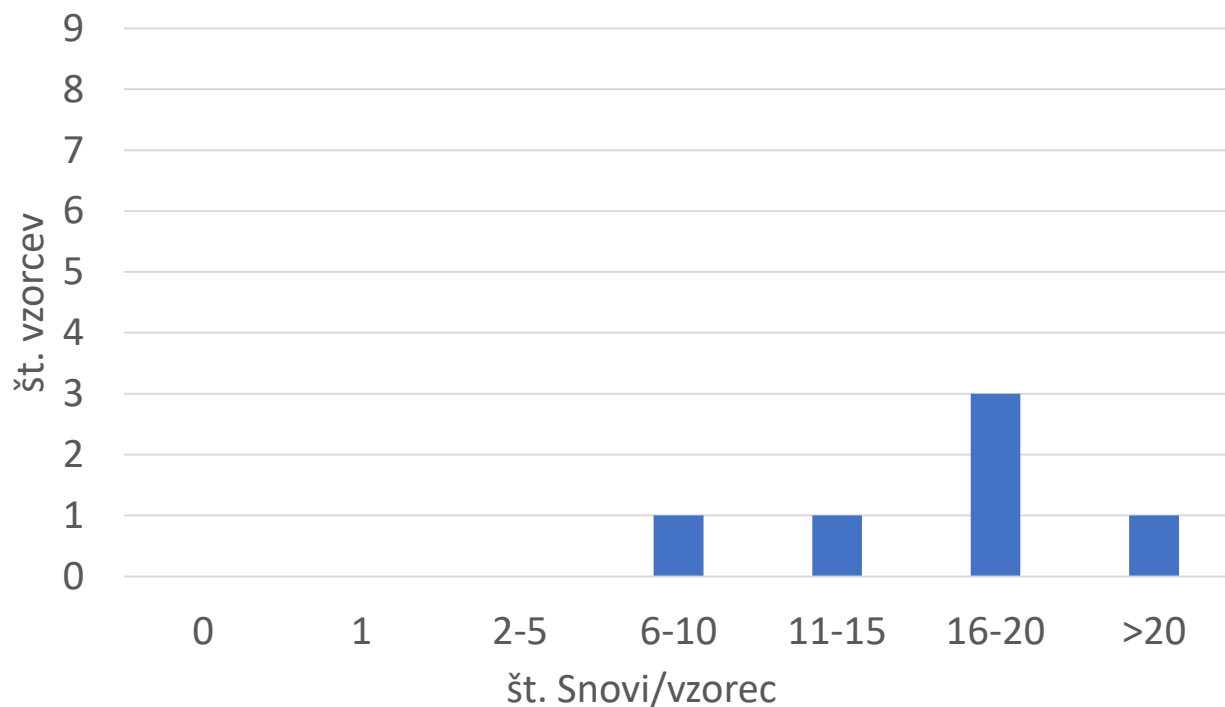


Category



Površinske vode - Slovenija

- 6 površinski voda testiranih
- 32 snovi zaznanih/193 analiziranih (17%)
- SLO: 8-23 snovi/vzorec
- SPRINT: 8-39 snovi/vzorec



	compound	frequency (%)	Median concentration (ug/L)
1	Glyphosate	100%	42.87
2	AMPA	100%	58.92
3	Atrazine	100%	4.04
4	DDE p,p'	100%	0.09
5	Dieldrin	100%	0.11
6	Hexachlorobenzene	100%	0.11
7	Lindane	100%	0.63
8	DDT p,p'	83%	0.07
9	DDE o,p'	67%	0.10
10	Terbutylazine	67%	1.21
11	Terbutryn	67%	2.87
12	DDD o,p'	50%	0.12
13	DDD p,p'	50%	0.16
14	DDT o,p'	50%	0.04
15	Fluopyram	50%	2.56
16	Piperonyl butoxide	50%	1.00
17	Azoxystrobin	33%	9.45
18	Metalaxyl_M	33%	2.06
19	Metazachlor	33%	2.17
20	Metolachlor_S	33%	5.79
21	Tebuconazole	33%	3.07
22	Bentazone	17%	13.67
23	Carbendazim	17%	6.58
24	Chlorothalonil	17%	0.21
25	Clomazone	17%	4.02
26	Fludioxonil	17%	9.58
27	Mecoprop (P)	17%	20.11
28	Metalaxyl_CGA62826	17%	11.84
29	Pirimicarb_desmethyl	17%	1.72
30	Propiconazole	17%	2.46
31	Terbutylazine_desethyl	17%	1.31
32	Trifloxystrobin_CGA321113	17%	7.30

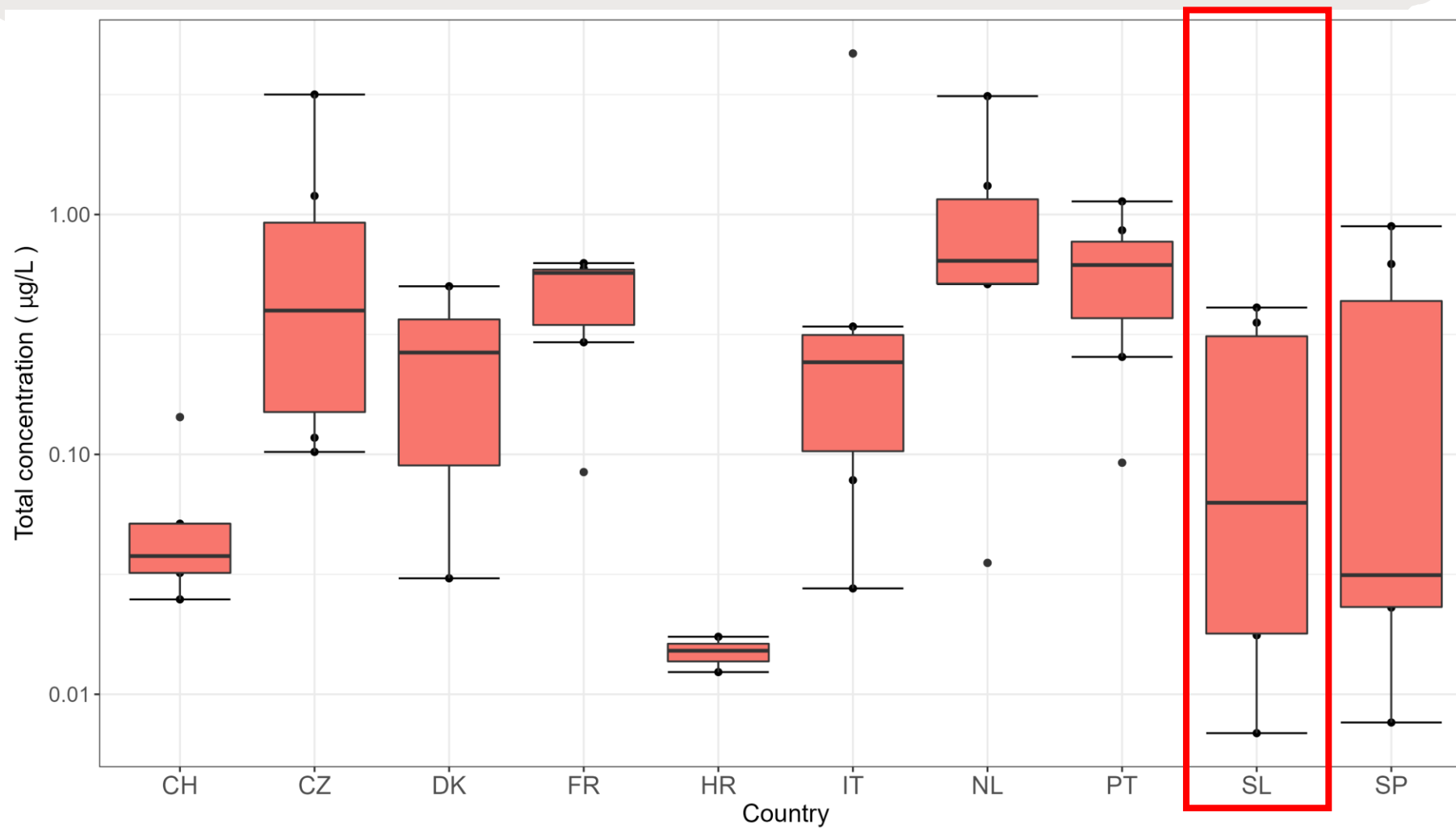
Površinske vode - Slovenija

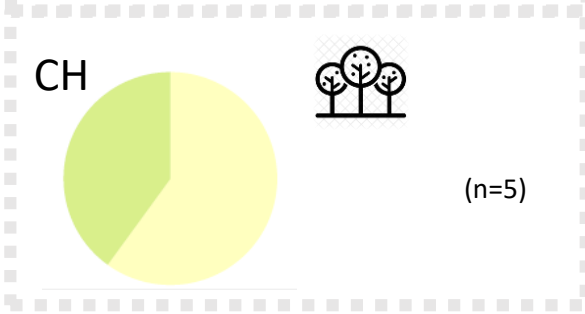
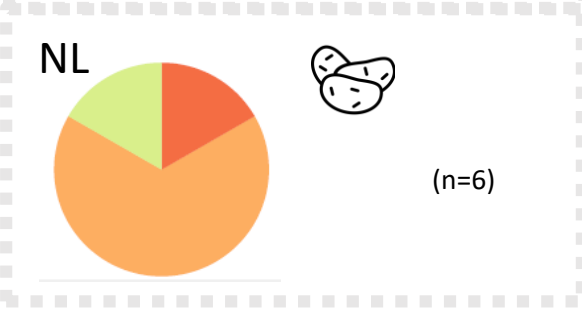
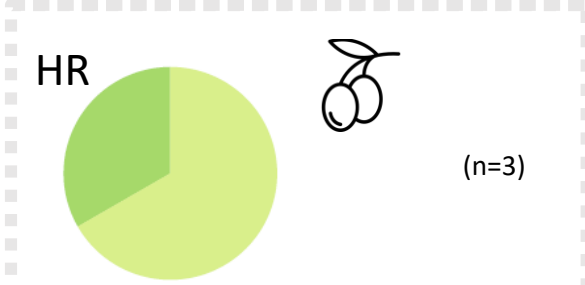
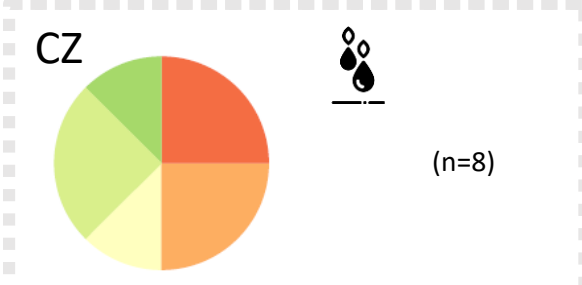
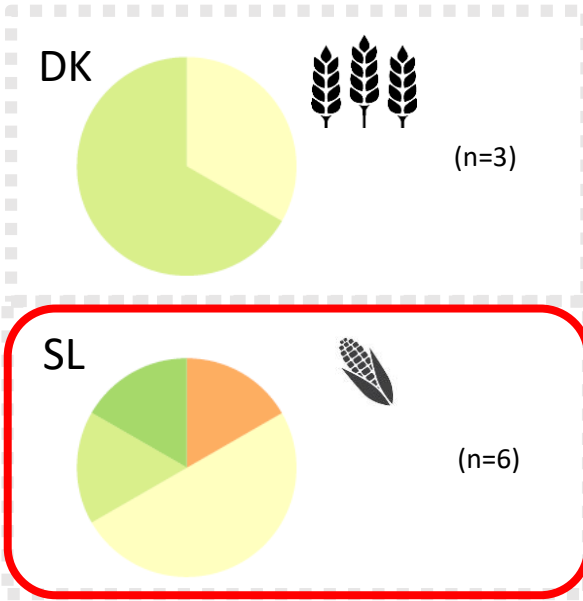
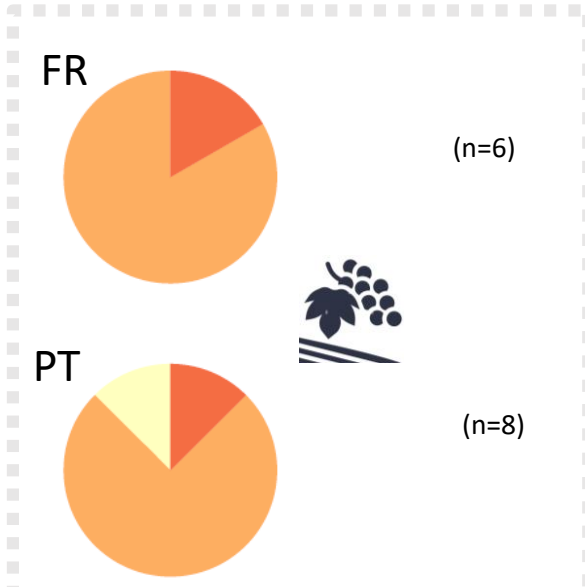
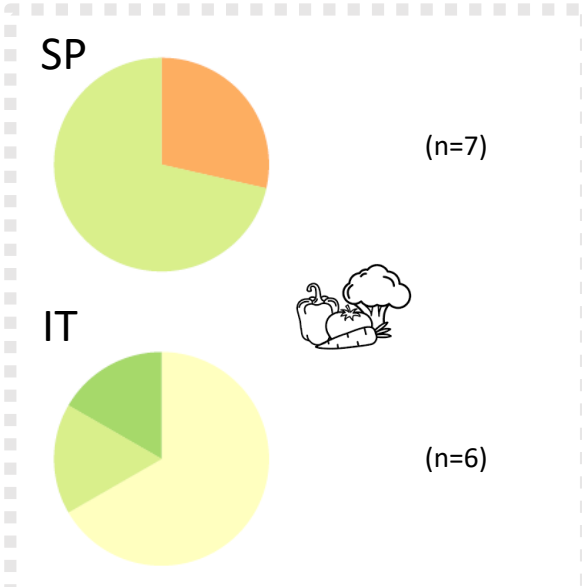
Vodotok	Matrika	FFS prisotnih v vzorcih od vseh aktivnih snovi in metabolitov testiranih (ug/L)																															
		Glyphosate	AMP A	Atrazine	Bentazone	Mecoprop (P)	Metazachlor	Metolachlor (S)	Clomazone	Terbutylazine	Terbutylazine desethyl	Terbutryn	Azoxystrobin	Carbendazim	Chlorothalonil	Fludioxonil	Fluopyram	Hexachlorobenzene	Metaxylolone (M)	CGA 6282	Tebuconazole	Trifloxystrobin	DDD o,p'	DDD p,p'	DDE p,p'	DDE o,p'	DDT o,p'	DDT p,p'	Dieldrin	Lindane (gamma-HCH)	Piperonyl butoxide	Pirimethanil	Propiconazole
herbicid											fungicid											insecticid											
Sava – Medvode (11 FFS)	Voda	3.74	5.84	5.01	-	-	-	-	0.60	0.37	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	0.04	-	-	0.07	0.08	0.52	-	-	2.46
Gradaščica – Dobrova (8 FFS)	Voda	3.39	2.12	0.57	-	-	-	-	-	-	-	-	-	-	-	-	0.08	-	-	-	-	-	-	-	0.05	-	-	0.13	0.05	0.49	-	-	-
Sromljica – Brežice (20 FFS)	Voda	189	141	11.76	-	-	2.74	9.90	4.02	1.65	11.26	13.69	-	-	9.58	4.39	0.11	2.90	-	4.31	-	-	-	0.06	0.04	-	-	0.08	0.64	0.56	1.72	-	-
Gabernica – Brežice (17 FFS)	Voda	82.0	112	3.78	-	-	-	-	0.76	1.31	1.30	5.20	-	-	-	-	0.18	-	-	-	-	-	0.27	0.28	0.35	0.33	0.22	0.21	0.33	0.67	1.00	-	-
Pritok Mirne – Mokronog (16 FFS)	Voda	3.20	3.18	4.29	-	-	1.69	-	-	-	-	-	-	-	0.21	2.07	0.18	1.23	-	-	-	0.12	0.16	0.14	0.10	0.04	0.05	0.14	0.81	-	-	-	
Temenica – Trebnje/Ponikve (23 FFS)	Voda	145	131	2.53	13.67	20.11	1.59	-	2.51	4.43	-	6.58	-	-	2.55	0.12	-	11.84	1.82	7.30	0.11	0.14	0.12	0.10	0.03	0.04	0.15	0.62	1.76	-	-	-	

Površinski vodotoki, ki tečejo ob poljih. Zbirajo vnose iz številnih razpršenih in točkovnih virov, tudi urbanih.

Površinske vode - SPRINT

Skupna vsebnost snovi (Total concentration—Water)



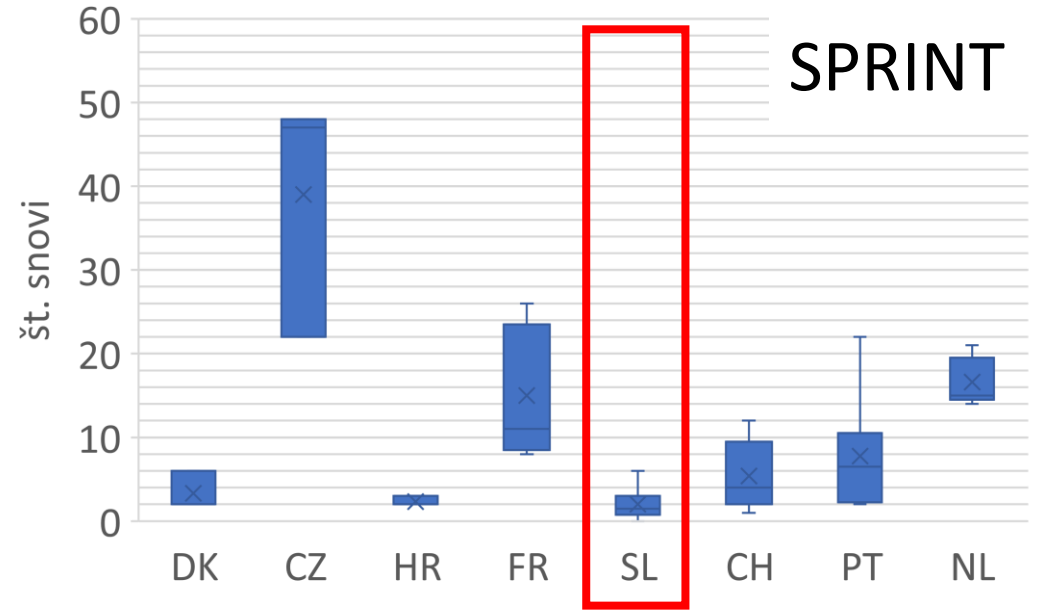
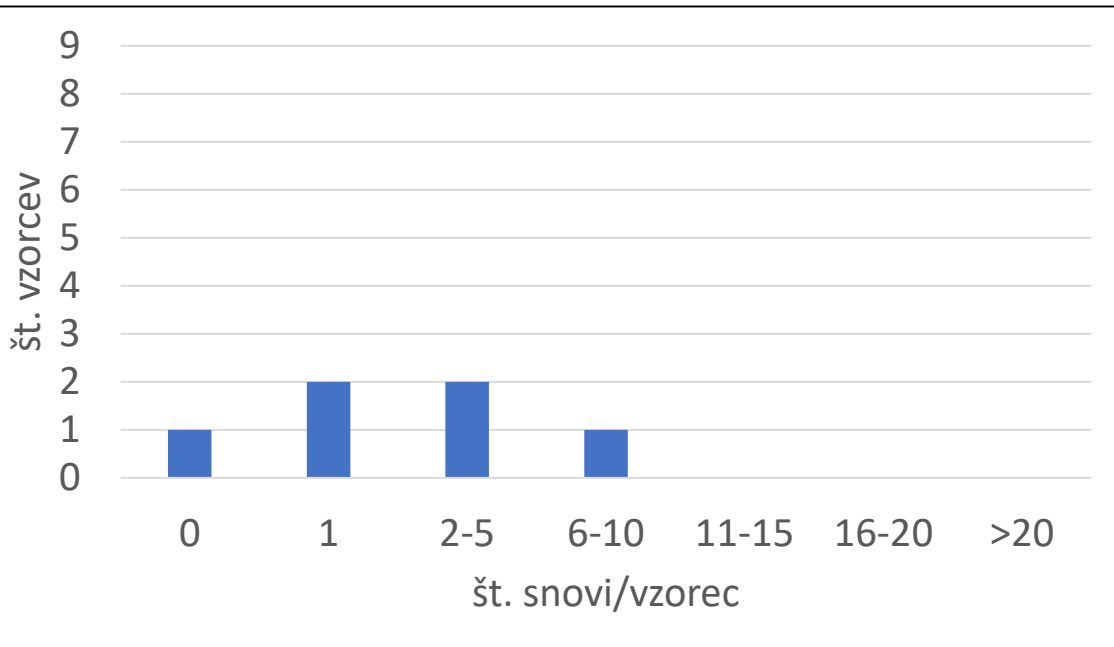


Category

- 31-40 Compound detected
- 21-30 Compound detected
- 16-20 Compound detected
- 9-15 Compound detected
- 8 Compound detected

Sediment površinskih voda - Slovenija

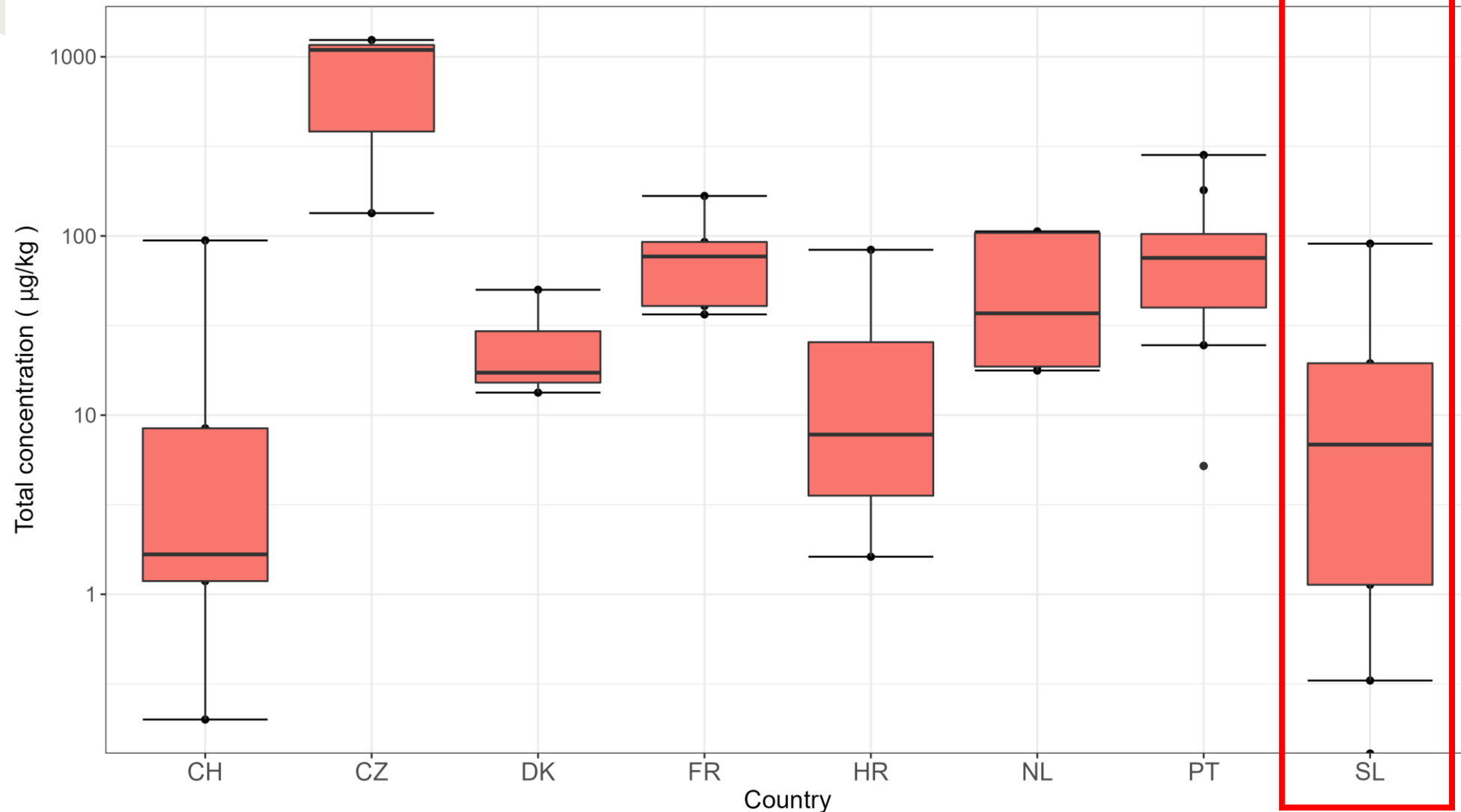
- 6 vzorcev
- 8 snovi zaznanih/196 analiziranih (4%)
- SLO: 0-6 snovi/vzorec
- SPRINT: 0-48 snovi/vzorec



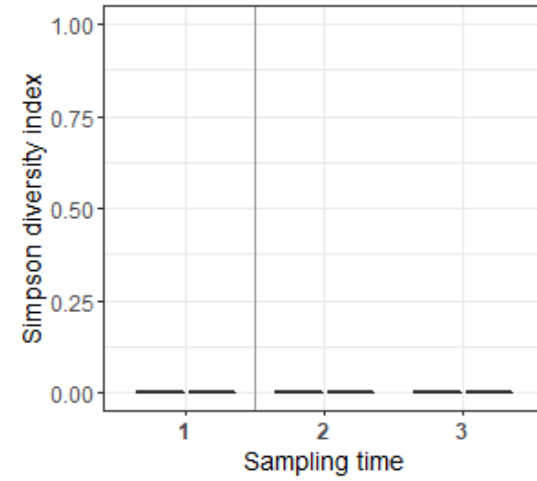
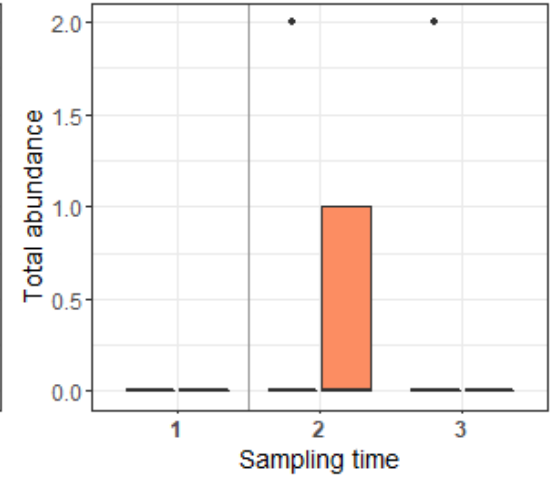
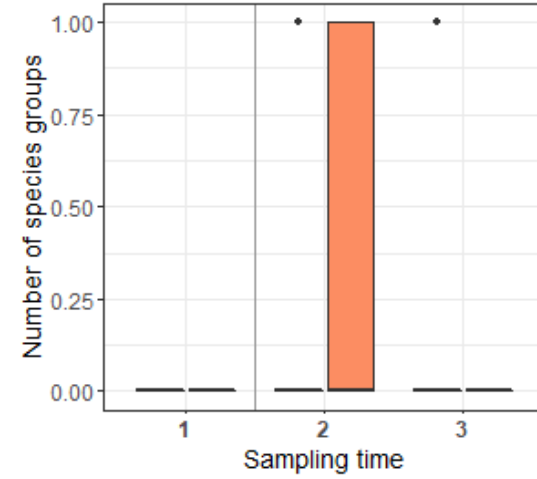
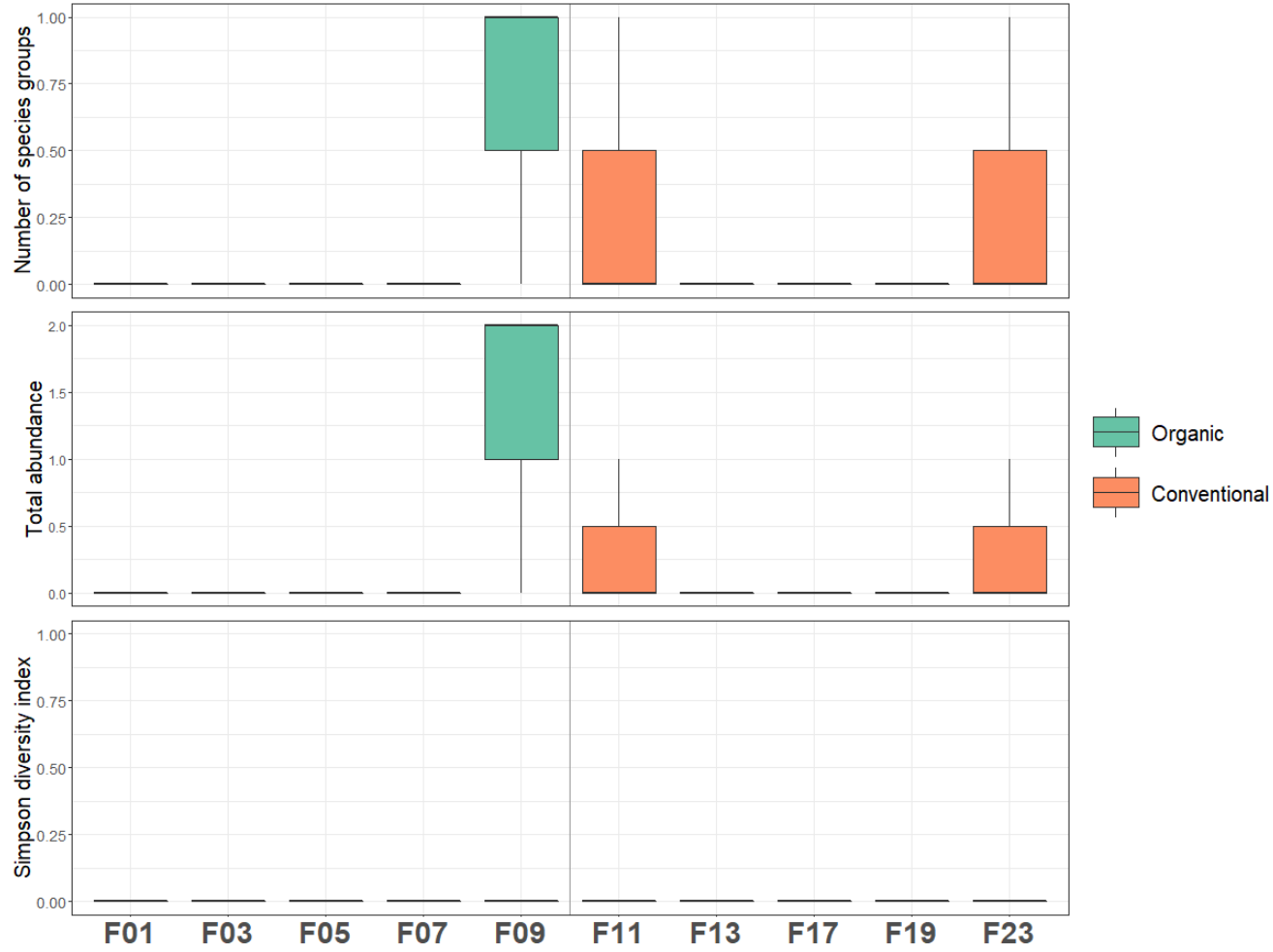
	compound	frequency (%)	concentration (ug/kg)
1	AMPA	50%	14.23
2	Glyphosate	33%	8.41
3	Prosulfocarb	33%	0.33
4	Azoxystrobin	17%	0.06
5	Fludioxonil	17%	0.16
6	Imidacloprid	17%	1.13
7	Metolachlor_S	17%	0.22
8	Terbutryn	17%	0.24



Sediment površinskih voda - Slovenija

Skupna vsebnost (Total concentration—Sediment)



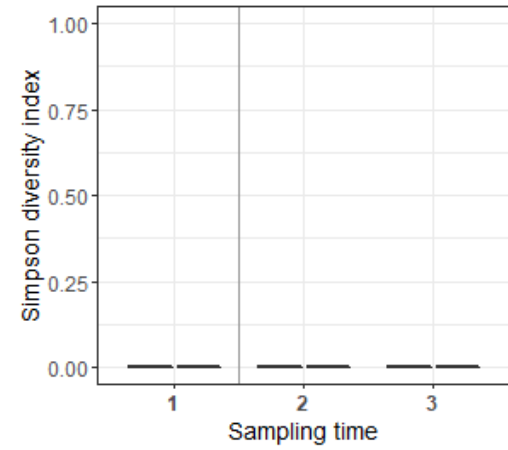
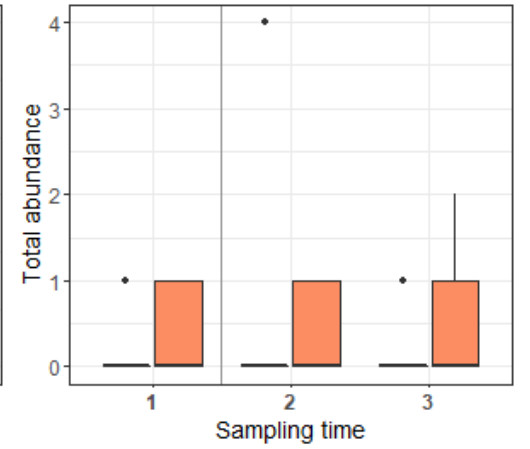
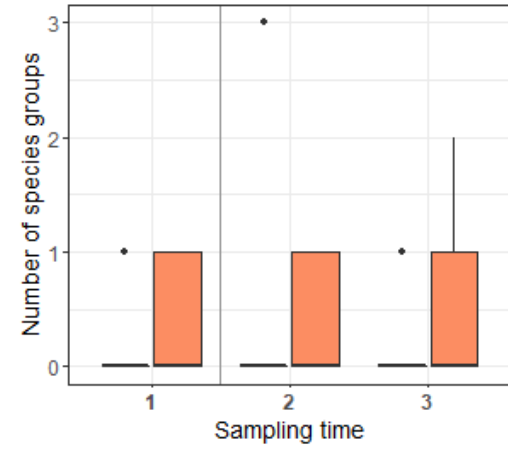
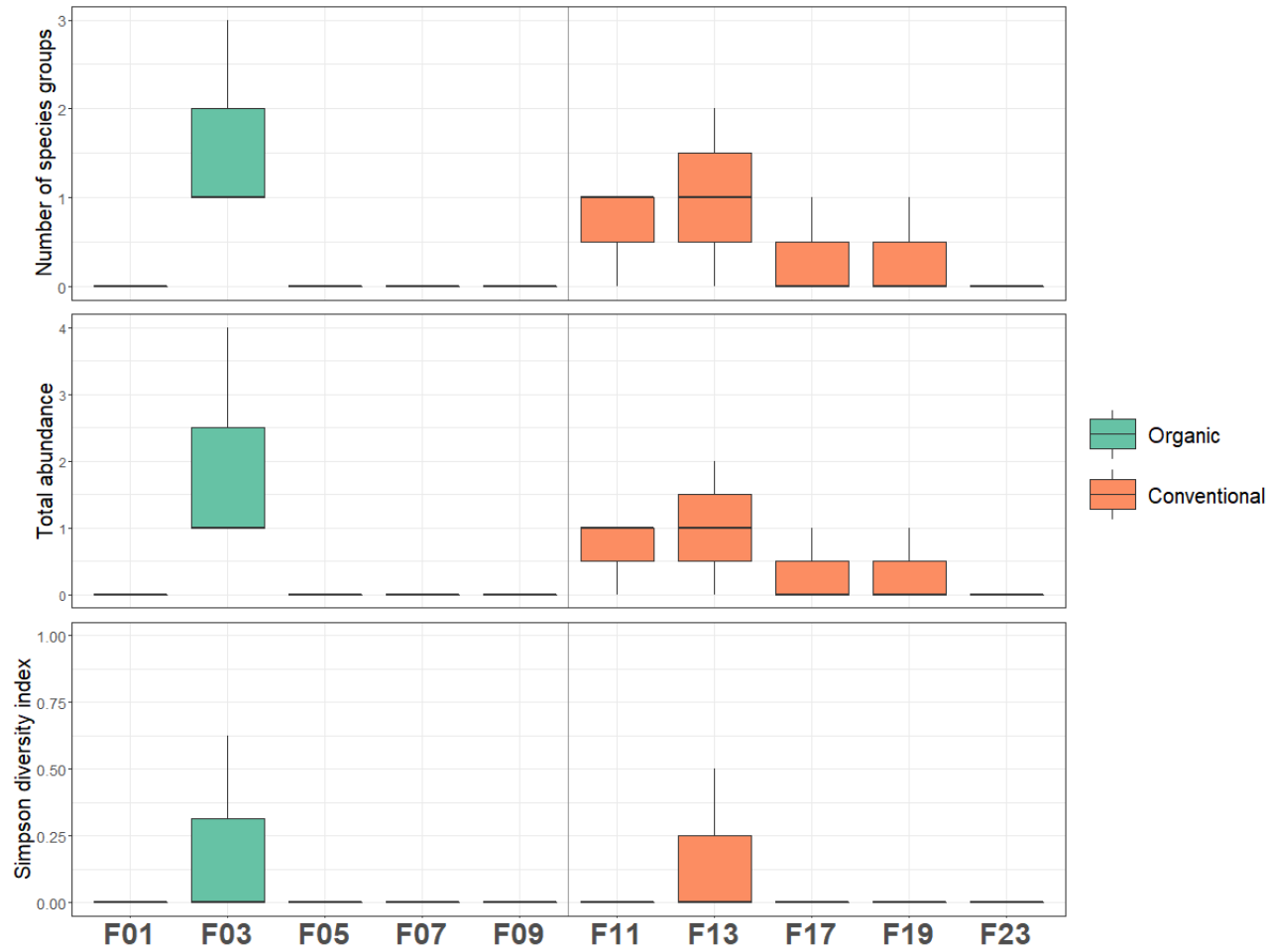
Žuželke – čebele - Slovenija (koruzna polja)



Management  Organic  Conventional



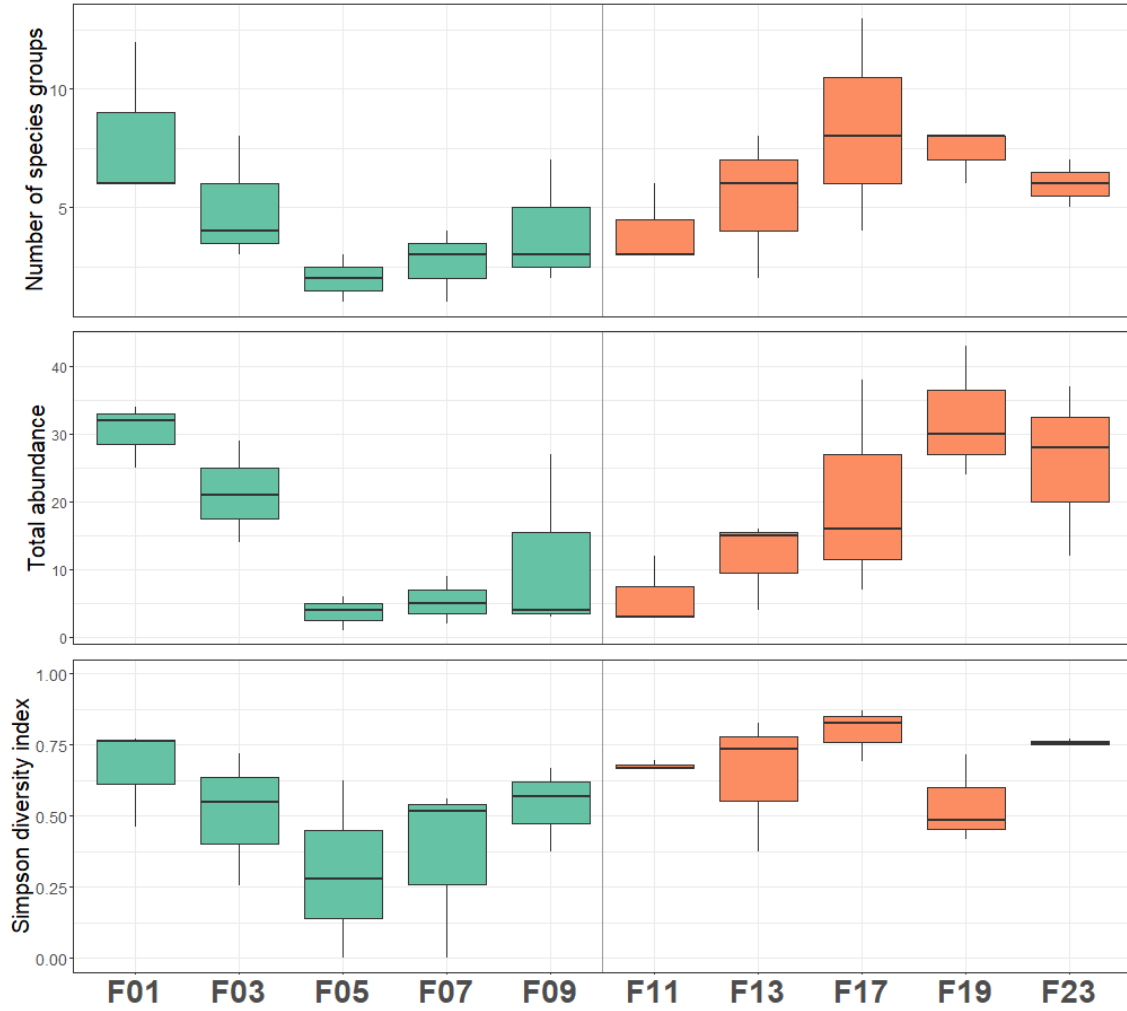
Žuželke – muhe trepetalke - Slovenija (koruzna polja)



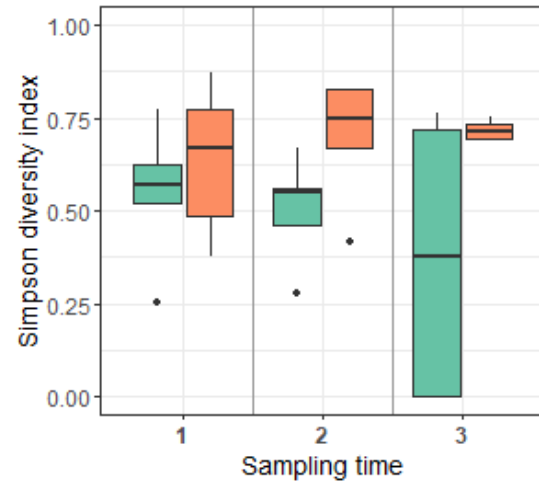
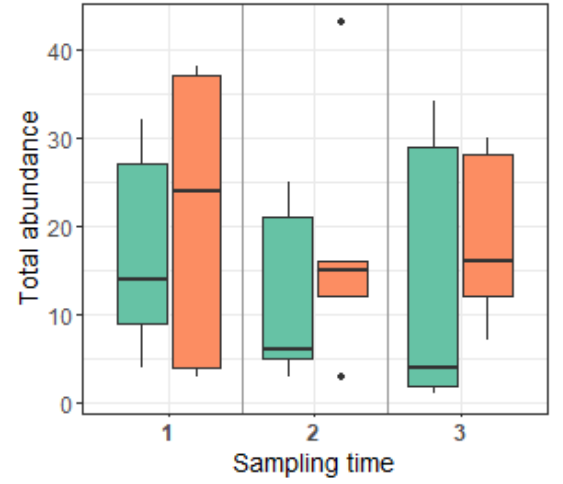
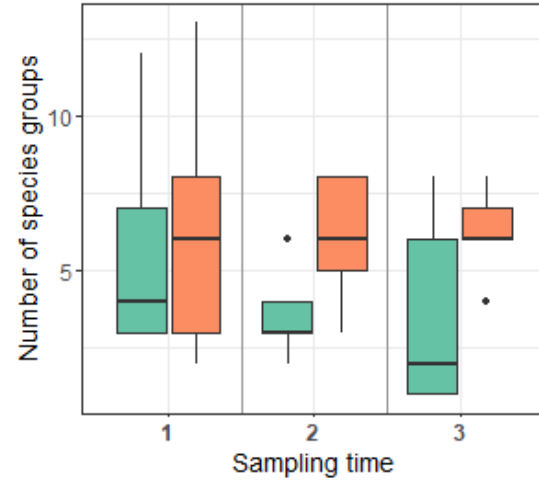
Management: Organic (green), Conventional (orange)



Žuželke – hrošči - Slovenija (koruzna polja)



Organic
Conventional

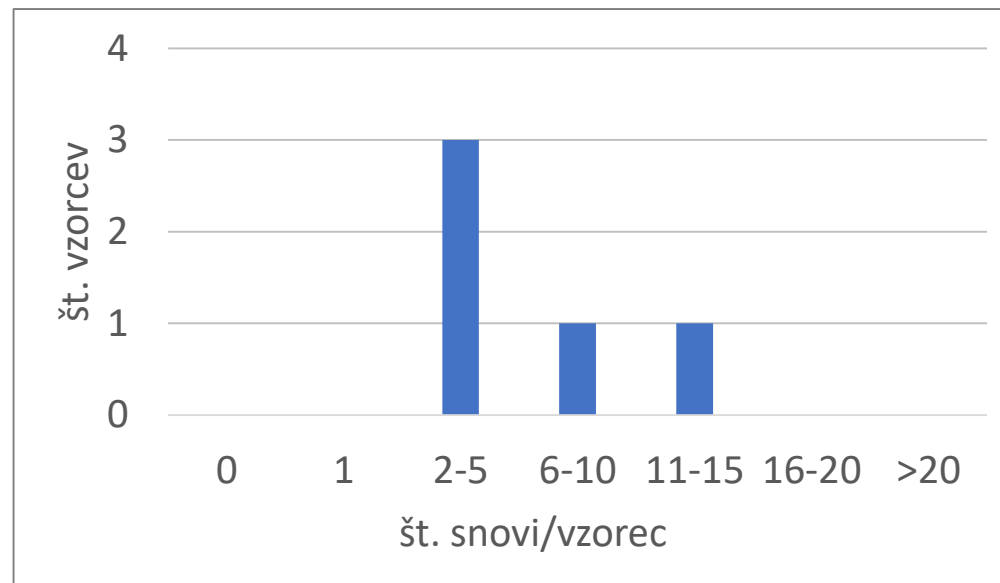


Management Organic Conventional

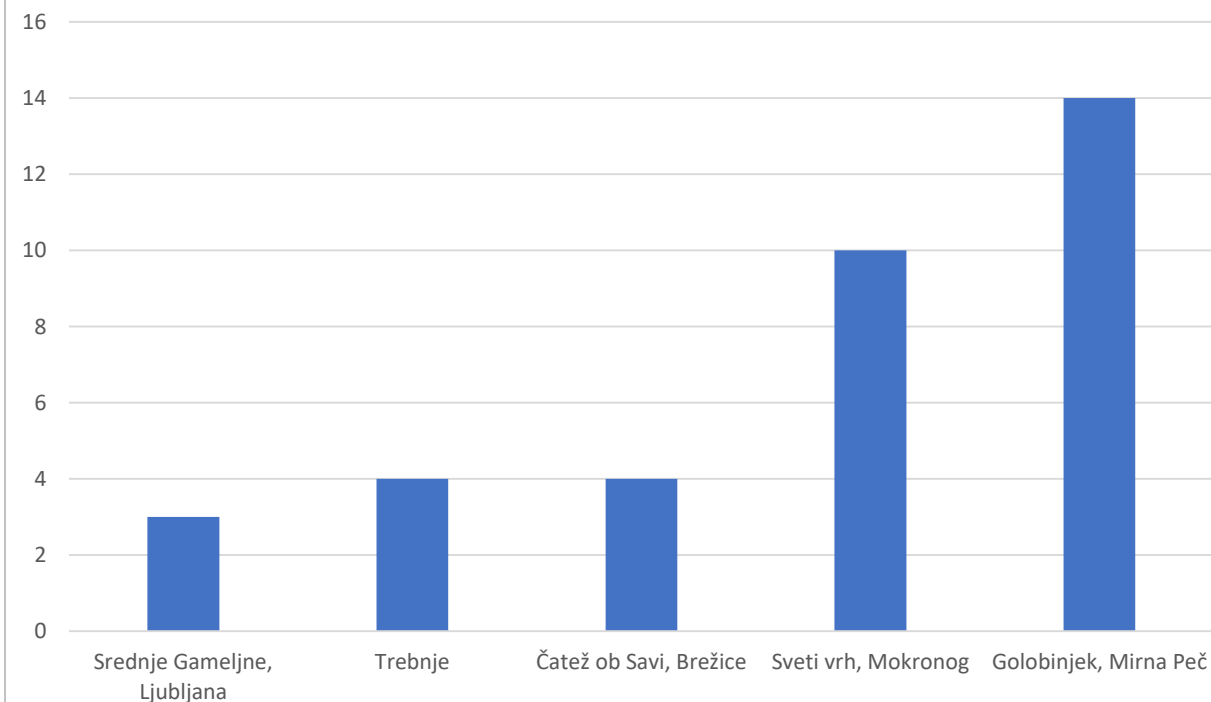


Netopirji – iztrebki - Slovenija

- 5 vzorcev
- 20 snovi zaznanih
- SLO: 3-14 snovi/vzorec
- SPRINT: 3-34 snovi/vzorec

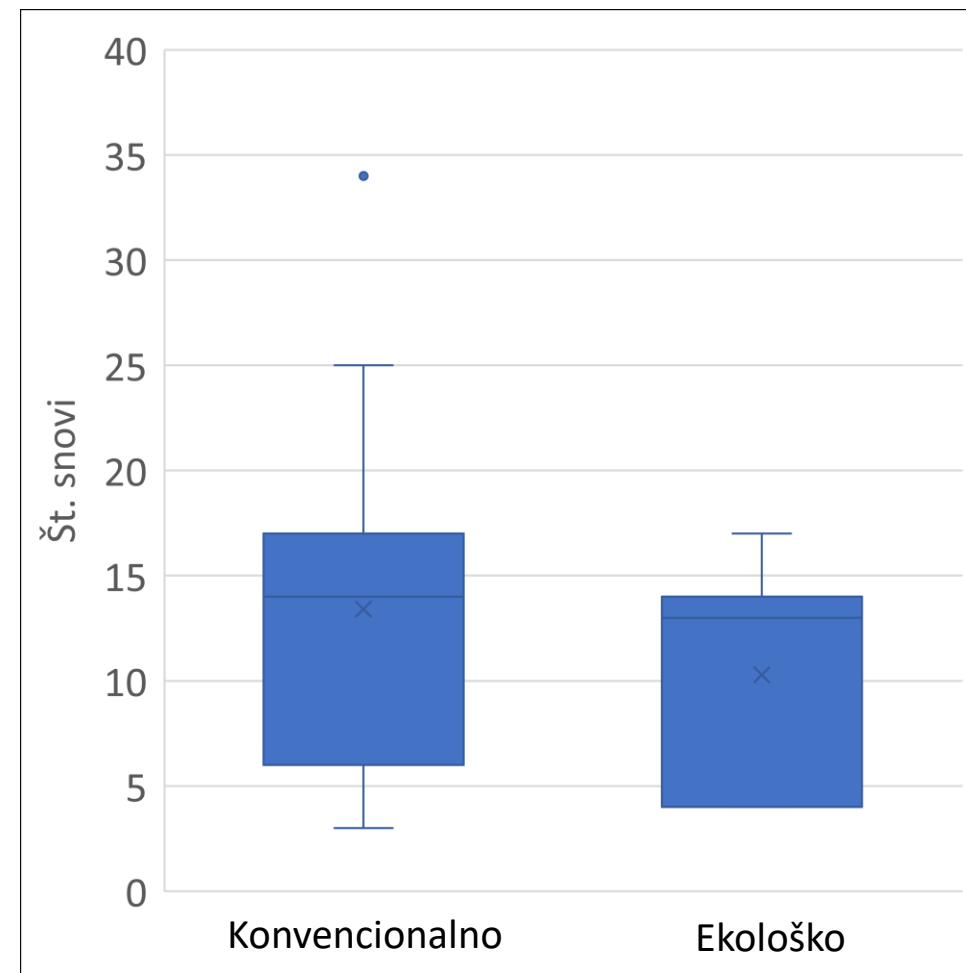
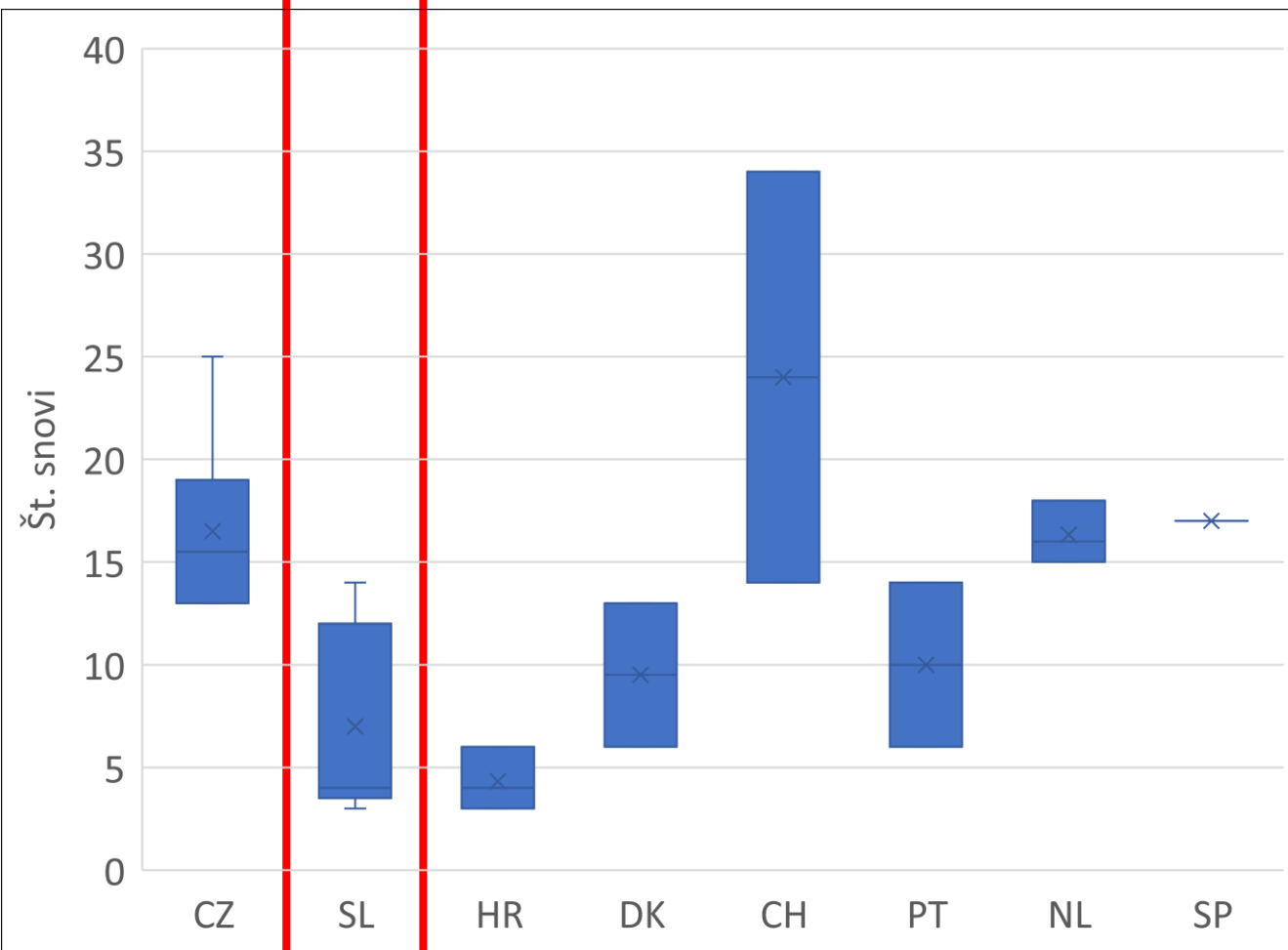


Število snovi v svežih iztrebkih netopirjev



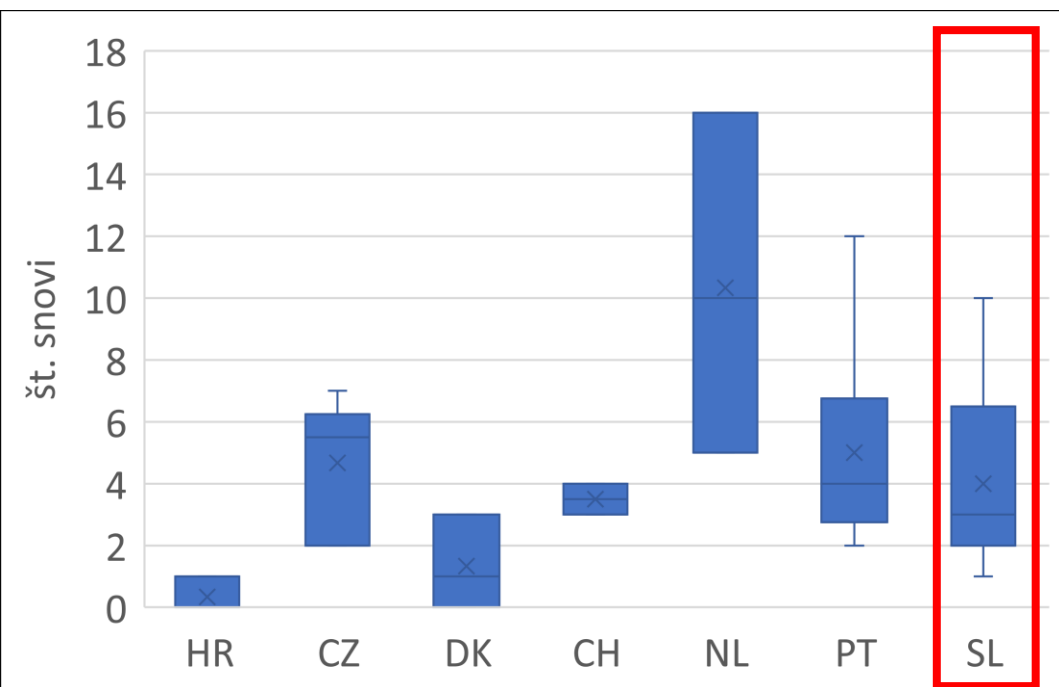
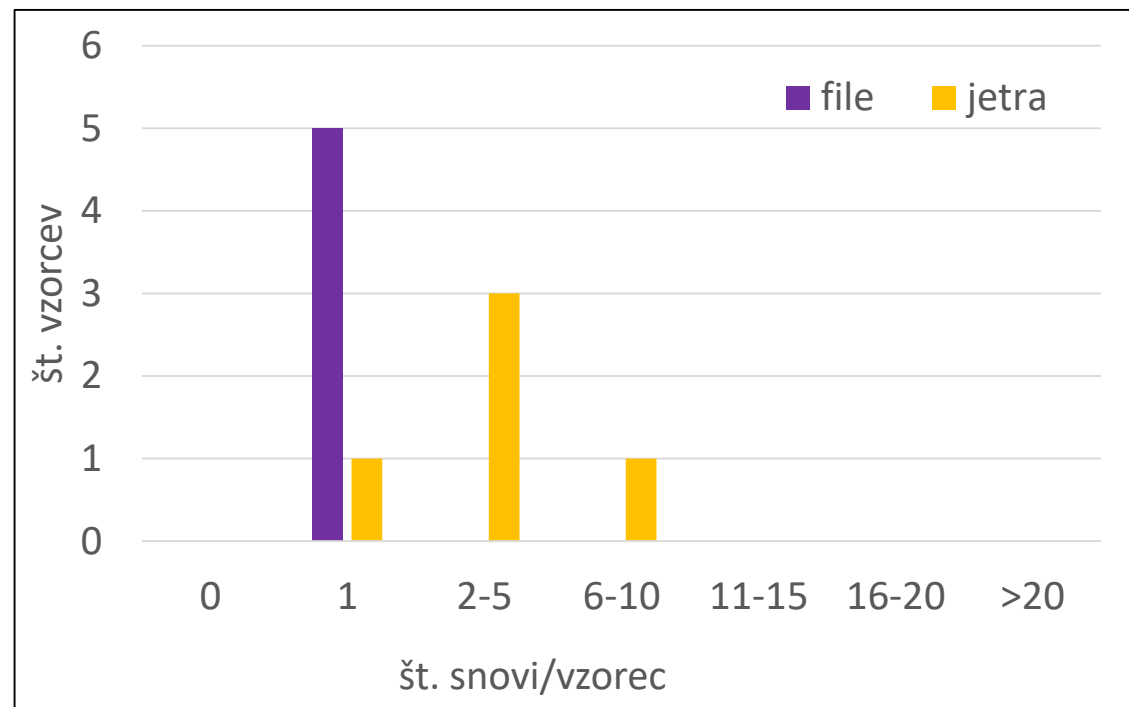
	compound	frequency (%)	concentration (ug/kg)
1	DDE p,p'	100%	0.66
2	Folpet_PHI	100%	24.50
3	Fipronil sulfone	60%	0.22
4	Glyphosate	40%	775.09
5	AMPA	40%	84.80
6	Lindane	40%	2.02
7	Mandipropamid	40%	3.37
8	Meptyldinocap	40%	2.60
9	Chlorpyrifos-methyl	20%	0.03
10	DDD o,p'	20%	0.06
11	DDD p,p'	20%	0.21
12	DDE o,p'	20%	0.04
13	DDT o,p'	20%	0.49
14	Dimethomorph	20%	0.47
15	Fenhexamid	20%	3.49
16	Fluopyram	20%	0.29
17	Hexachlorobenzene	20%	0.21
18	Metalaxyl_M	20%	0.44
19	Permethrin	20%	0.76
20	Trifloxystrobin_CGA321113	20%	0.88

Netopirji – iztrebki - SPRINT



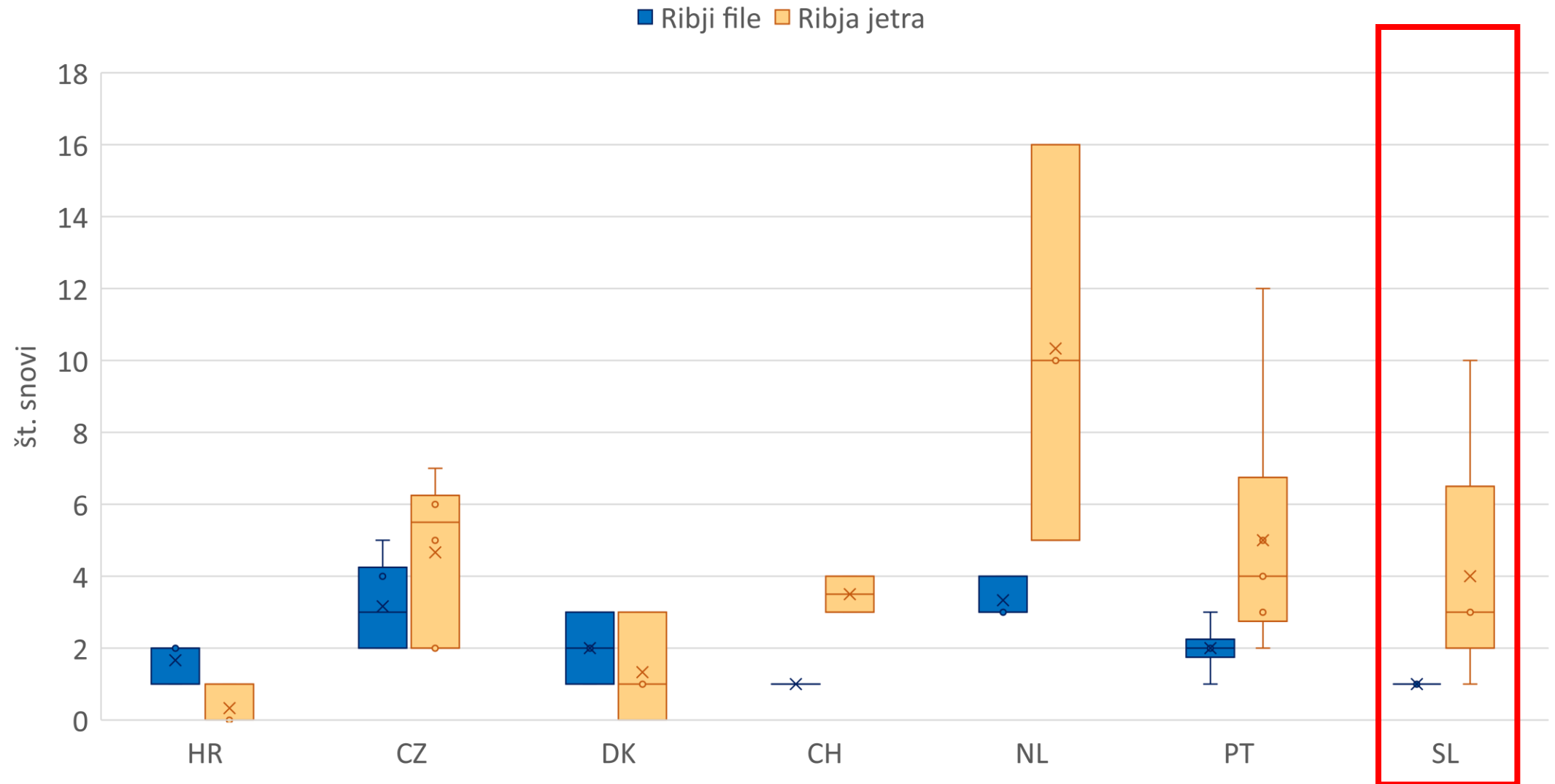
Ribe – jetra in file - Slovenija

- 5x file in 5xjetra
- 12 snovi zaznanih
- SLO: 1-10 snovi/vzorec
- SPRINT: 0-16

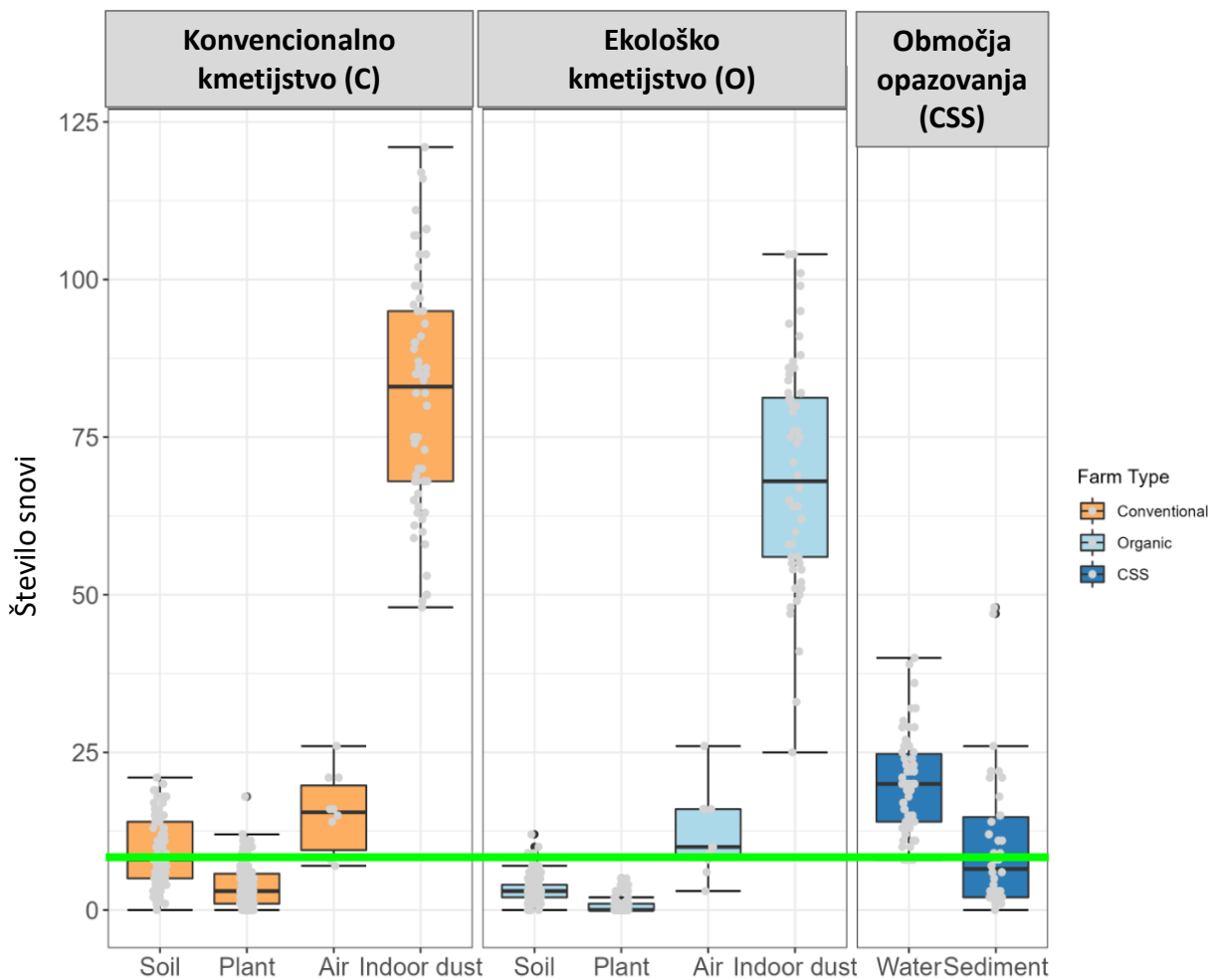


compound	file	concentration (ug/kg)	jetra	concentration (ug/kg)
	frequency (%)		frequency (%)	
1 Folpet_PHI	100%	22.43	60%	5.77
2 DDE p,p'			100%	1.13
3 DDD o,p'			40%	0.13
4 Permethrin			40%	1.39
5 Bifenthrin			20%	0.15
6 Chlorpropham			20%	0.84
7 Chlorpyrifos			20%	0.15
8 Cypermethrin			20%	0.39
9 DDD p,p'			20%	0.24
10 DDE o,p'			20%	0.12
11 Dieldrin			20%	0.69
12 Lindane			20%	0.24

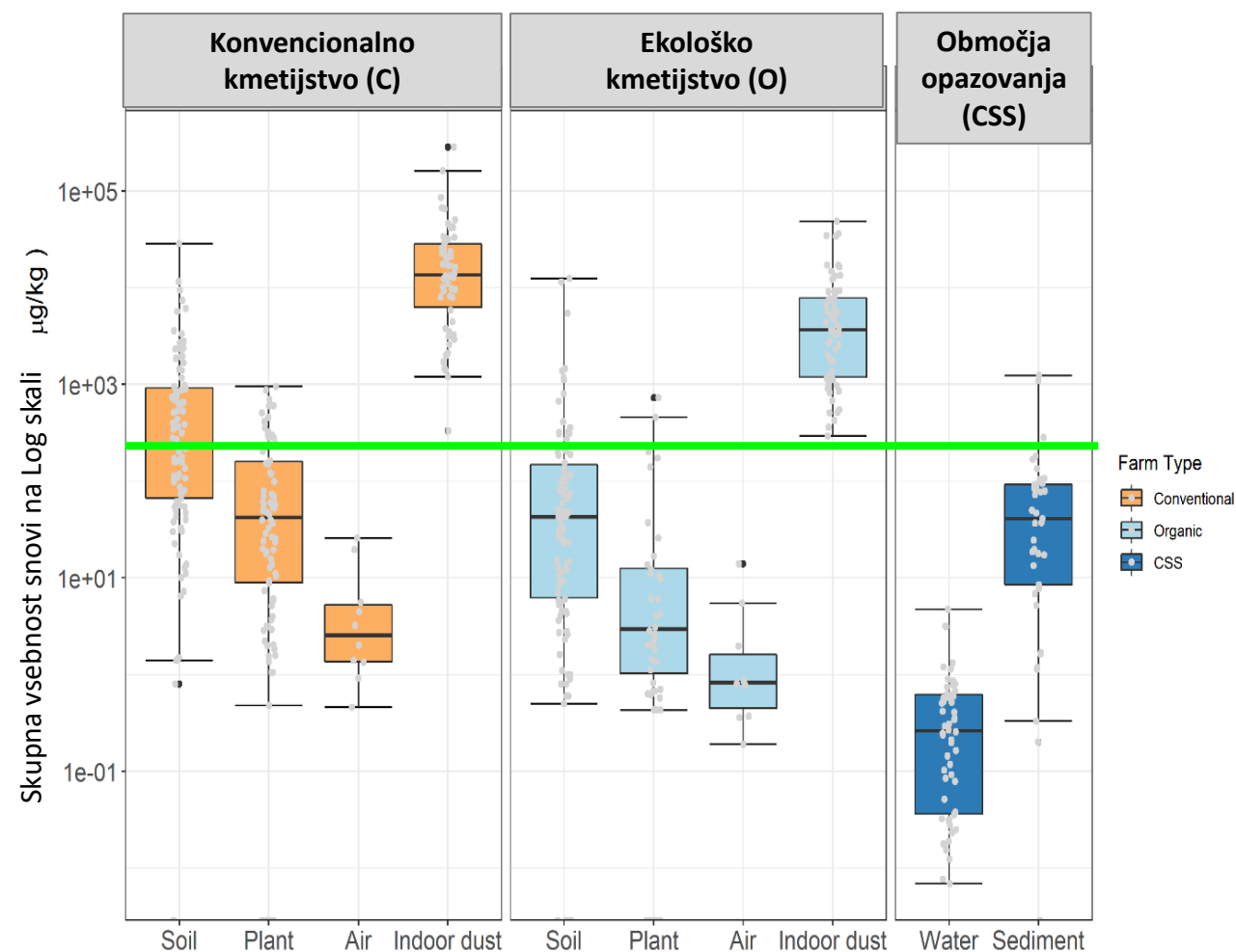
Ribe – jetra in file - SPRINT



SPRINT - Vsi vzorci projekta - okolje



Število ostankov pesticidov v različnih vrstah vzorcev



Skupna vsebnost ostankov pesticidov v različnih vrstah vzorcev

Slovenija

Uporabljene aktivne spojine za CSS-7 (Slovenija) – koruzna polja 2021
in če so bile te aktivne spojine odkrite v različnih izmerjenih matrikah.
Zaznano =”+”, Ni zaznano =”-“

C S S	Active compound applied	Type of product	Detected in soil	Detected in surface water	Detected in sediment	Detected in outdoor dust	Detected in Human - Blood	Detected in Human - Urine	Detected in Human - Faeces
S L	Metolachlor (S)	Herbicide	7/10 vzorcev (konv. njiva)	2/6 vzorca	-	2/2 vzorca	-	-	1/24 potrošnikov splošne populacije 1/24 sosedov
S L	Foramsulfuron	Herbicide	-	-	-	-	-	-	-
S L	2,4-D (free)	Herbicide	-	-	-	-	-	-	-
S L	Isoxaflutole	Herbicide	-	-	-	-	-	-	-



SPRINT

SUSTAINABLE PLANT PROTECTION TRANSITION



ANALYZE

Domače živali
Krave, Mačke



European
Commission

Živali – Slovenija

Kmetija

konvencionalno : ekološko

Mačka - blato			
Vsi vzorci			
Matrix	count	frequency	median concentration (ug/kg)
DDE p,p'	4	100%	0.25
Folpet PHI	4	100%	26.09
Cypermethrin	3	75%	1.50
Glyphosate	2	50%	30.59
Chlorpyrifos-methyl	2	50%	0.32
Deltamethrin	2	50%	1.98
Permethrin	2	50%	1.34
Piperonyl butoxide	2	50%	3.85
Bifenthrin	1	25%	0.21
DDD o,p'	1	25%	0.15
DDD p,p'	1	25%	0.17
DDE o,p'	1	25%	0.15
Fipronil	1	25%	0.16
Fluroxypyr	1	25%	1.43
Pyroxsulam	1	25%	3.20

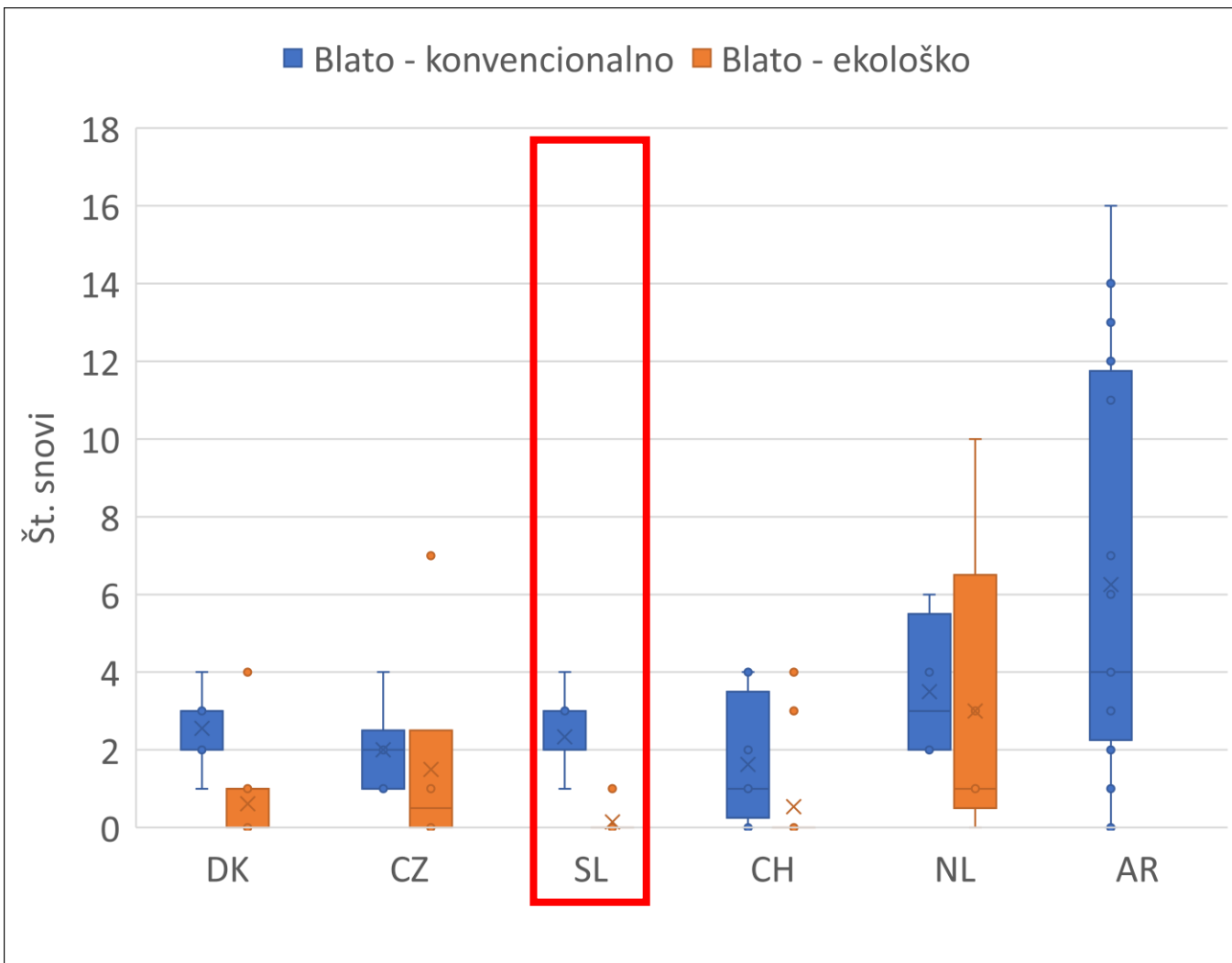
Krave - zapestnica								Krave - blato								Krave - mleko			
Konvencionalno				Ekološko				Konvencionalno				Ekološko				Vsi vzorci			
Matrix	count	frequency	median concentration (ug/kg)	Matrix	count	frequency	median concentration (ug/kg)	Matrix	count	frequency	median concentration (ug/kg)	Matrix	count	frequency	median concentration (ug/kg)	Matrix	count	frequency	median concentration (ug/kg)
Pendimethalin	6	100%	4.81	Pendimethalin	4	100%	2.60	AMPA	8	89%	10.51	DDE p,p'	1	14%	0.16	-	0	0	0
Piperonyl butoxide	4	67%	5.29	Piperonyl butoxide	3	75%	0.90	Glyphosate	6	67%	54.28								
Terbutylazine	4	67%	0.44	Sedaxane	3	75%	1.95	Cypermethrin	3	33%	0.72								
Dimethenamid_P	3	50%	0.37	Thiamethoxam	3	75%	0.44	Folpet PHI	3	33%	5.42								
Metalaxyl_M	3	50%	1.18	Spirotetramat_keto_hydroxy	2	50%	6.67	Chlorpyrifos	1	11%	0.22								
Metolachlor_S	3	50%	2.71	Dimethenamid_P	1	25%	5.21												
Terbutylazine_desethyl	3	50%	0.29	Dimethomorph	1	25%	0.22												
Cymoxanil	2	33%	0.35	Fipronil	1	25%	1.08												
Fluopyram	2	33%	0.30	Metalaxyl_M	1	25%	0.40												
Pirimiphos-methyl	2	33%	0.29	Metolachlor_S	1	25%	1.96												
Sedaxane	2	33%	1.23	Propiconazole	1	25%	1.03												
Thiacloprid	2	33%	19.52	Terbutylazine	1	25%	0.57												
Thiamethoxam	2	33%	126.50	Terbutylazine_desethyl	1	25%	0.34												
Acetamiprid	1	17%	0.22	Terbutryn	1	25%	0.34												
Azoxystrobin	1	17%	0.74	Tolyfluanid metabolite DMST	1	25%	0.83												
Clothianidin	1	17%	0.25																
Dimethomorph	1	17%	0.20																
Haloxyp_P	1	17%	3.77																
Methiocarb sulfoxide	1	17%	0.33																
Tolyfluanid metabolite DMST	1	17%	1.66																

Živali – SPRINT - Kmetija

konvencionalno : ekološko

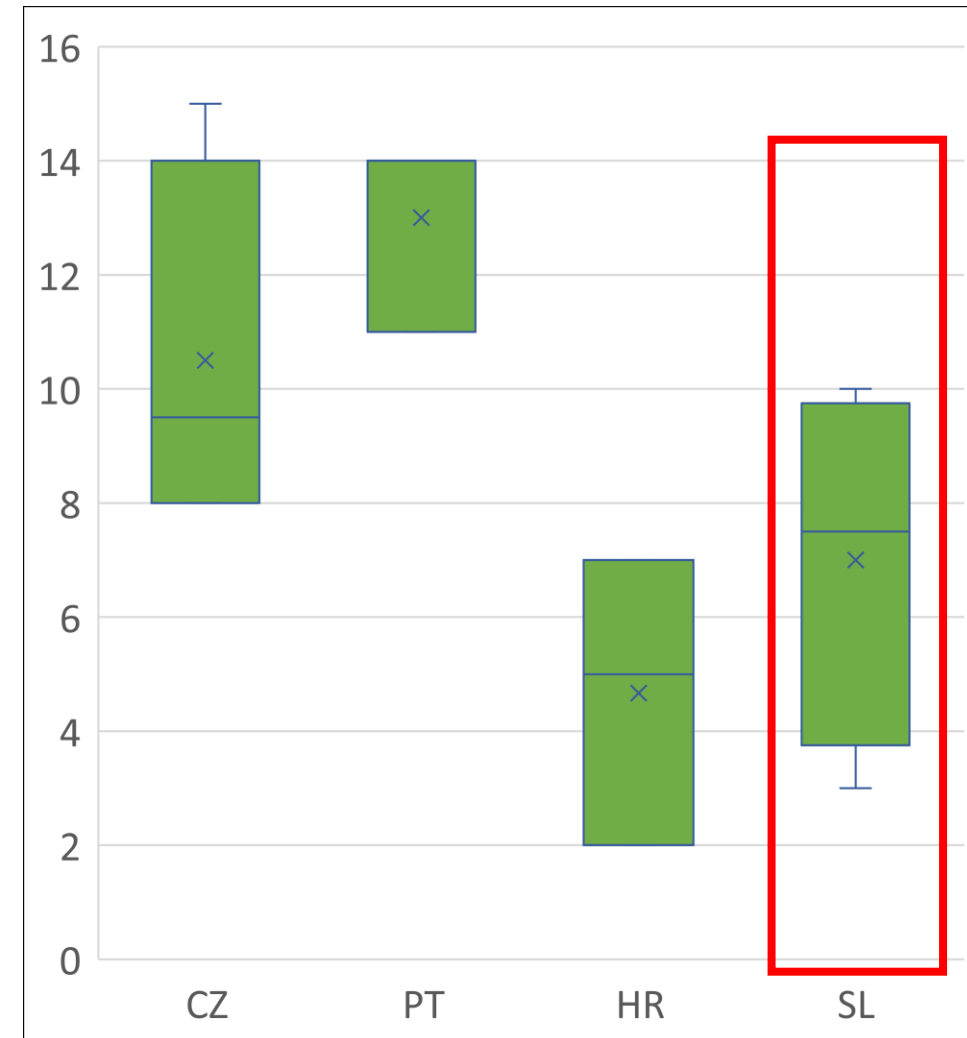
Krave - blato

(81 konv, 49 eko vzorcev)



Mačke - blato

(14 vzorcev)





SPRINT

SUSTAINABLE PLANT PROTECTION TRANSITION



ANALIZE

LJUDJE

kmetje, sosedje, potrošniki



European
Commission

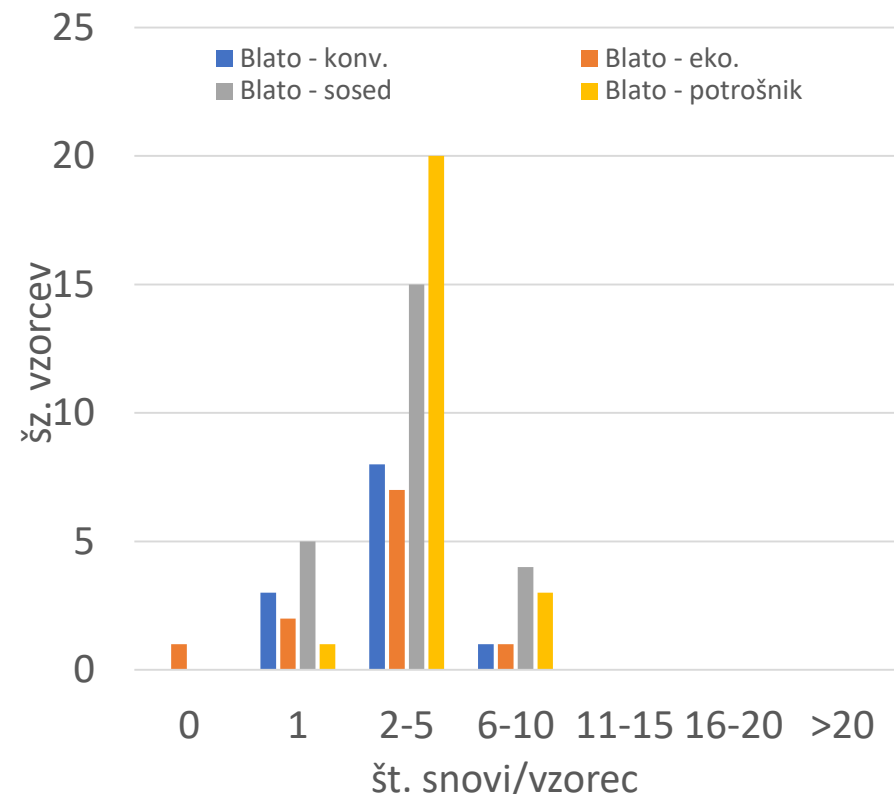
Človeški vzorci – Slovenija

Blato

vsi sodelujoči (kmeti, sosedi, potrošniki)

BLATO (71 vzorcev)

Kmet - konvencionalen				Kmet - ekološki				Sosed				Potrošnik			
FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)
Glyphosate	9	75%	15.2	Glyphosate	7	64%	16.8	Glyphosate	20	83%	25.75	Glyphosate	20	83%	16.3
DDE p,p'	6	50%	0.3	DDE p,p'	7	64%	0.5	DDE p,p'	8	33%	0.5	DDE p,p'	9	38%	0.3
Pyroxsulam	4	33%	5.7	Hexachlorobe	5	45%	0.3	Pyroxsulam	6	25%	13	Spirotetramat	8	33%	2.3
Cypermethrin	3	25%	0.8	Lambda_cyha	3	27%	1.8	Cypermethrin	5	21%	0.9	Pyroxsulam	7	29%	4.2
Folpet_PHI	2	17%	13.3	Cypermethrin	2	18%	0.95	Hexachlorobe	5	21%	0.2	Deltamethrin	5	21%	0.7
Hexachlorobe	2	17%	0.25	Deltamethrin	2	18%	5.05	Lambda_cyha	5	21%	1.2	Folpet_PHI	4	17%	6.2
Chlorpyrifos-r	1	8%	1.1	Folpet_PHI	2	18%	11.95	Deltamethrin	4	17%	5.1	Cypermethrin	3	13%	1.1
Deltamethrin	1	8%	9.9	Oxadixyl	1	9%	1.9	Spirotetramat	4	17%	3.75	Cyprodinil_CG	3	13%	17.8
Fenhexamid	1	8%	13.5	Permethrin	1	9%	1	Acetamiprid	2	8%	2.35	Fenhexamid	3	13%	11.7
Lambda_cyha	1	8%	3.2	Pyroxsulam	1	9%	1.7	Captan_THPI	2	8%	5.15	Lambda_cyha	3	13%	2.5
Pendimethalin	1	8%	9.1	Tau_fluvalinat	1	9%	10.6	Chlorantranil	2	8%	1.6	Fludioxonil	2	8%	10.8
Permethrin	1	8%	0.9	Tri-allate	1	9%	3.4	Difenoconazole	2	8%	2.9	Hexachlorobe	2	8%	0.2
Piperonyl but	1	8%	2.8					Fipronil sulfon	2	8%	0.15	Imazalil	2	8%	2.65
Pirimiphos-m	1	8%	1.7					Fludioxonil	2	8%	20.35	Pendimethalin	2	8%	5.55
Spirotetramat	1	8%	2					Folpet_PHI	2	8%	10.1	Azoxystrobin	1	4%	5.6
								Pendimethalin	2	8%	8.65	Chlorpyrifos	1	4%	2.6
								Chlorpyrifos	1	4%	2.9	Clomazone	1	4%	1.6
								Fenhexamid	1	4%	4.8	Cyantranilipro	1	4%	3
								Fluopyram	1	4%	1.1	Cyflufenamid	1	4%	1.1
								Fluxapyroxad	1	4%	1.2	Cyprodinil	1	4%	161.8
								Imazalil	1	4%	2.7	Fipronil sulfon	1	4%	0.1
								Metolachlor	1	4%	1.3	Fonicamid	1	4%	1.3
								Permethrin	1	4%	2	Metalaxyl_CG	1	4%	4.8
								Phoxim	1	4%	21.7	Metolachlor_	1	4%	7.5
								Pyriproxyfen	1	4%	2.8	Oxadixyl	1	4%	3
								Tau_fluvalina	1	4%	6.4	Phoxim	1	4%	1.4
												Pyriproxyfen	1	4%	4.5
												Spirotetramat	1	4%	2.3
												Spirotetramat	1	4%	6.2
												Tri-allate	1	4%	4
												Trifloxystrobin	1	4%	2



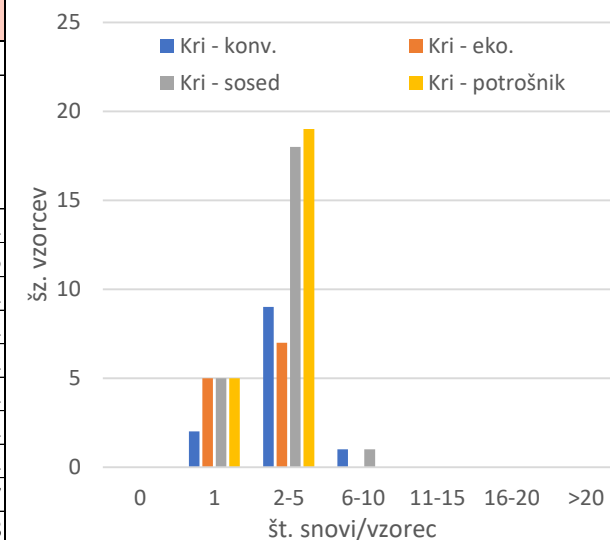
Človeški vzorci – Slovenija

Krvna plazma, Urin

vsi sodelujoči (kmeti, sosedi, potrošniki)

BLOOD (71 vzorcev)

Kmet - konvencionalen				Kmet - ekološki				Sosed				Potrošnik			
FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)
Bromoxynil	7	58%	0.07	Fluazifop (f	8	67%	0.03	DDE p,p'	12	52%	0.26	Bromoxynil	16	67%	0.12
DDE p,p'	6	50%	0.16	DDE p,p'	6	50%	0.36	Fluazifop (f	11	48%	0.08	DDE p,p'	12	50%	0.15
Fluazifop (f	5	42%	0.13	Fluopyram	3	25%	0.04	Bromoxynil	9	39%	0.10	D2_4	6	25%	0.12
D2_4	3	25%	0.12	D2_4	2	17%	0.12	Metconaz	5	22%	0.02	Fluazifop (f	5	21%	0.02
Fipronil sul	3	25%	0.14	Hexachlor	2	17%	0.06	Chlorpyrif	4	17%	0.23	Fenoxycarb	4	17%	0.02
Chlorpyrif	2	17%	0.41	Metconaz	2	17%	0.12	Fluopyram	4	17%	0.06	Fluopyram	3	13%	0.22
Fenoxycarb	2	17%	0.03	Bromoxynil	1	8%	0.03	D2_4	3	13%	0.15	Tebuconaz	3	13%	0.02
Tebuconaz	2	17%	0.05	Chlorpyrif	1	8%	0.19	Tebuconaz	3	13%	0.05	Chlorpyrif	2	8%	0.32
Diflufenica	1	8%	0.71	Quizalofop	1	8%	0.61	Captan_TH	2	9%	0.48	Fluopyram	2	8%	0.77
Hexachlor	1	8%	0.06					Cyantranilil	2	9%	0.01	Fipronil sul	1	4%	0.18
Metconaz	1	8%	0.10					Fipronil sul	2	9%	0.91	Metconaz	1	4%	0.03
Terbutylal	1	8%	0.07					Hexachlor	1	4%	0.07	Metribuzin	1	4%	0.00
								Piperonyl b	1	4%	0.10	Prochloraz	1	4%	0.11



URIN - Izvedene samo meritve Glifosata in AMPA

URIN (72 vzorcev)

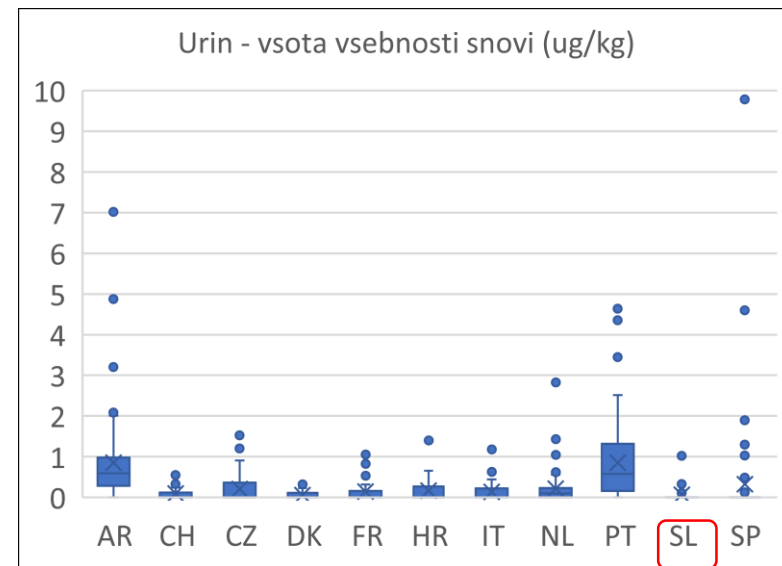
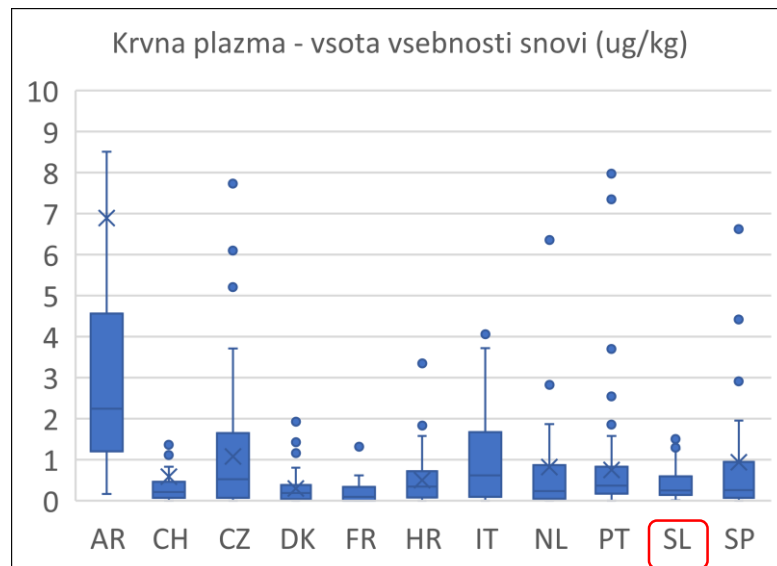
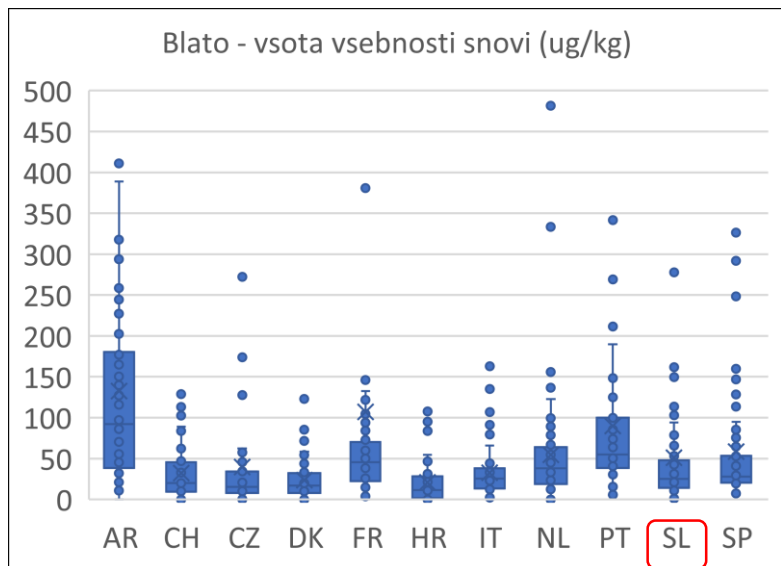
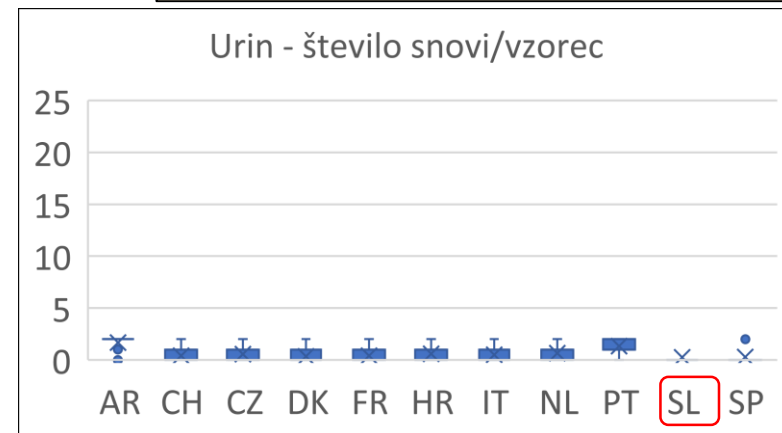
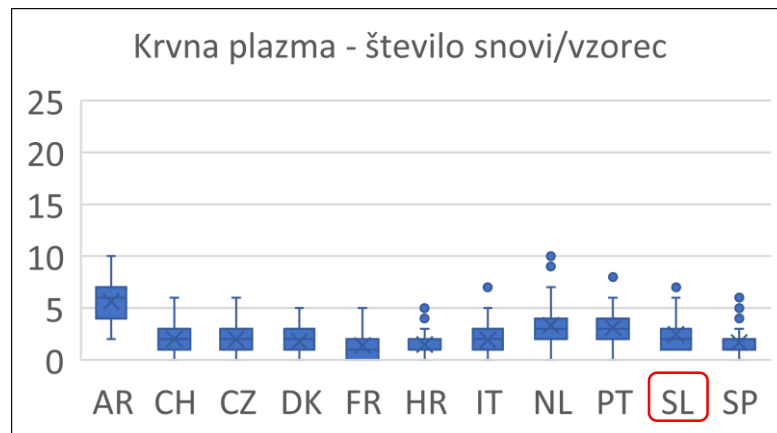
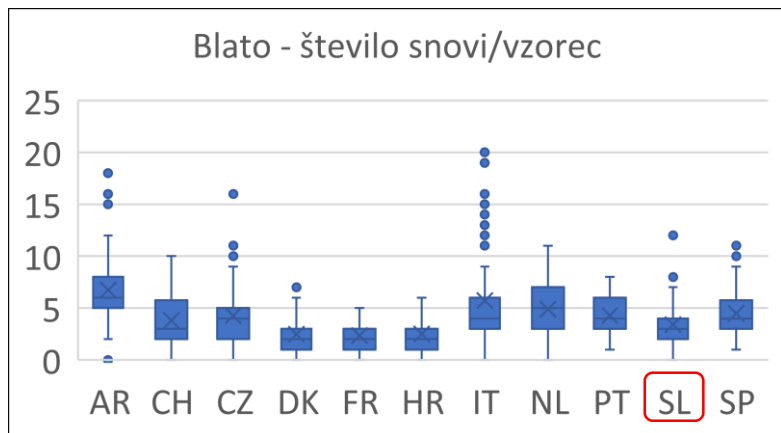
Kmet - konvencionalen				Kmet - ekološki				Sosed				Potrošnik			
FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)	FFS	count	frequency	median concentration (ug/kg)
Glyphosate	4	33%	0.17	AMPA	2	17%	0.37	Glyphosate	4	17%	0.16	Glyphosate	3	0.13	0.15
				Glyphosate	1	8%	0.16	AMPA	2	8%	0.32	AMPA	1	0.04	0.21

Človeški vzorci – SPRINT

Blato, Krvna plazma, Urin

vsi sodelujoči (715) (kmeti, sosedi, potrošniki)

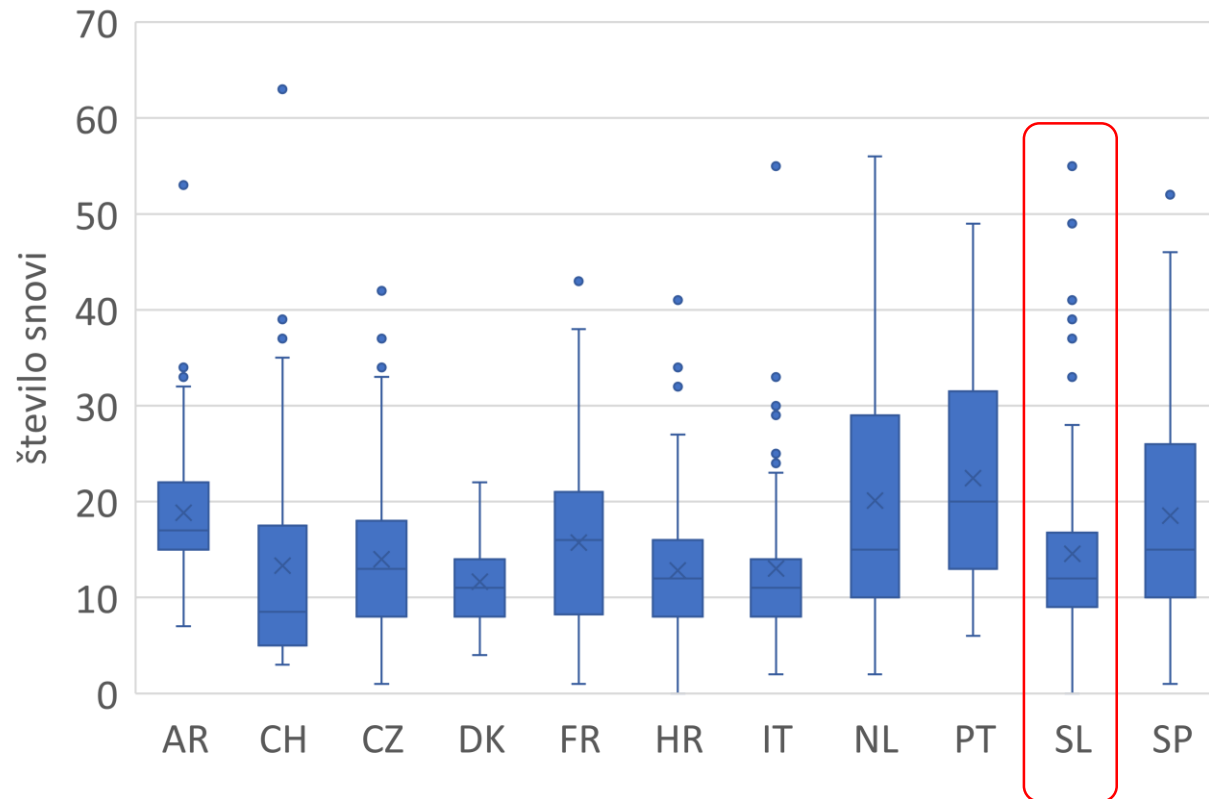
Urin
Izvedene samo meritve Glifosata in AMPA



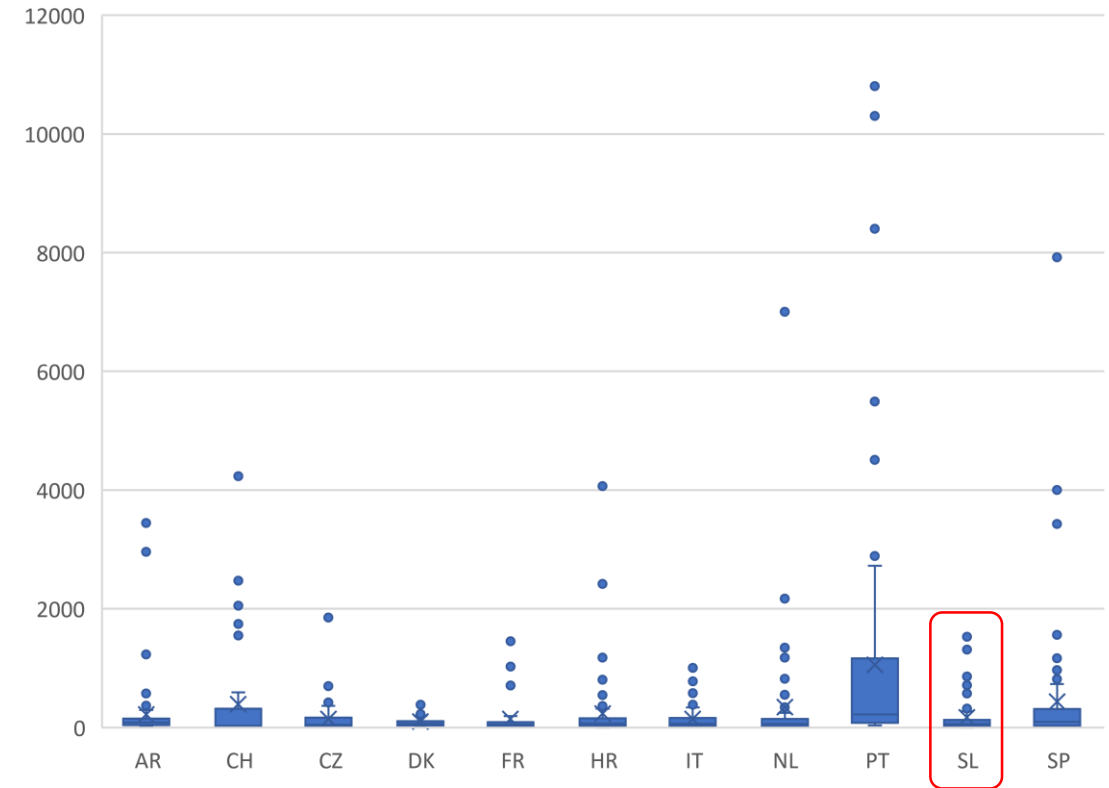
Človeški vzorci – SPRINT ZAPESTNICE

vsi sodelujoči (715) (kmeti, sosedi, potrošniki)

Število snovi zaznanih v analizi zapestnic

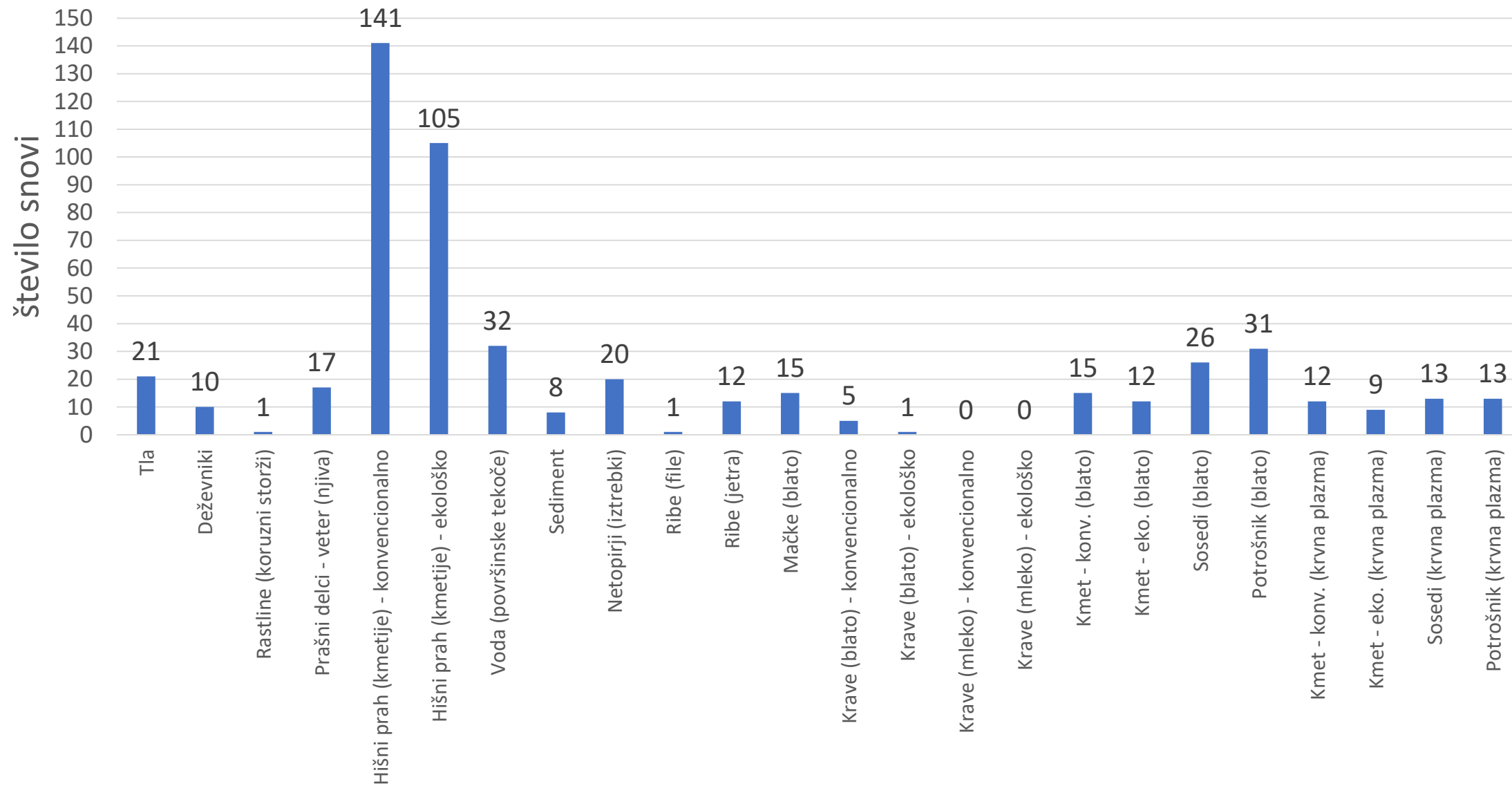


Vsota vsebnosti snovi (ug/kg)



POVZETEK – SLOVENIJA

Število aktivnih snovi oz. razgradnih produktov zaznanih v analizi



Mešanice in seštevanje učinkov

Pripravki so, predno pridejo na trg, podvrženi strogi presoji vplivov na okolje in zdravje.

Presoja se pripravi za vsak pripravek posebej.

Pričakuje se, da vsak pripravek posebej, v primeru pravilne uporabe, nima škodljivih vplivov.

Učinki mešanic več ostankov različnih aktivnih snovi, razgradnih produktov in aditivov niso del rednega postopka presoje regulatorja.

Odgovorno ravnanje vseh členov v verigi

Kmetovalci pri svojem delu uporabljajo samo tiste pripravke, ki so ali so bili registrirani in dovoljeni za uporabo na določenem območju.

Regulator je odgovoren, da so na trgu pripravki, ki izpolnjujejo vse okoljske in zdravstvene standarde.

Kmetovalci zaupajo regulatorju, da so na trgu samo pripravki, ki odgovarjajo vsem okoljskim in zdravstvenim standardom.

Kmetovalci so odgovorni, da pripravke uporabljajo v skladu z navodili za uporabo. V ta namen morejo opravljati obvezna obdobja izobraževanja.

Nadzor izvaja kmetijska inšpekcija.

Hvala za pozornost

Vprašanja

???



20. junij 2023



SPRINT
SUSTAINABLE PLANT PROTECTION TRANSITION

Več informacij:

Project introduction: <https://youtu.be/Ym0qL8lLiGE>

Different WPs in CSS: <https://www.youtube.com/channel/UCW-gORRBq50KJtpopkfvTCw>

Field work: <https://sprint-h2020.eu/index.php/resources/interactive-monitoring-plan> AND

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0259748>

Website - <https://www.sprint-h2020.eu/>

Email: sprint@wur.nl

BF-web: <https://www.bf.uni-lj.si/sl/raziskave/raziskovalni-projekti/183/sustainable-plant-protection-transition:-a-global-health-approach>



European
Commission