Appendix

Table A1. Orchard and landscape characteristics in integrated production (IP) and organic (ORG) orchards in Spain, Germany and Sweden. NA indicates that data were not available. Significant differences between management types within each country are shown in bold (t-tests/Mann-Whitney U; $P < 0.05$).

	Spain		Germany		Sweden	
	IP (N=14)	ORG (N=14)	IP (N=15)	ORG (N=15)	IP (N=14)	ORG (N=14)
Location	41°37'N, 0°38'E (Lleida); 41°59'N, 2°49'E (Girona)		Constance, 47°43'N, 9°23'E		Skåne, 55° 59'N, 13°26'E	
Temperature (°C, mean of 2015)	14.4 (Lleida); 14.9 (Girona)		11.1		9.5	
Annual precipitation (mm, 2015)	199.7; 541		736		724	
Cultivars	Golden, Golden Delicious		Braeburn		Aroma, Amorosa, Ingrid Marie, Rubinola	
Rootstock	M9		M9		M9	
Tree height (m)	2.0 - 3.5		2.2 - 3.7		2.5 - 4.0	
Spacing (m)	min 3 × 1, max 4 × 5		min 3 × 1, max 4 × 5		min 3.5 × 0.9, max 5 × 4	
Pruning	spindle		spindle		spindle (most), open vase (some)	
Size (ha)[a,b]	1.7±1.1	2.4±2.8	1.0±0.6	0.9±0.6	**15.8±11.1**	**3.7±3.7**
Tree age (years)[a]	11.4±7.3	13.3±8.3	9.7±3.7	9.9±3.0	15.5 ± 3.7	21.1±19.9
Land-use cover (%)[a]						
Orchard	41.6±30.5	32.5±31.1	34.1±16.4	27.0±11.1	15.4±12.2	11.2±12.8
Forest	1.0±2.0	2.6±3.3	19.3±17.3	19.5±15.6	14.3±14.1	19.7±14.2
Arable land	51.8±29.2	51.0±34.0	20.9±12.8	27.2±15.8	40.9±32.7	29.6±19.3
Grassland	0.62±0.93	1.26±2.71	11.9±5.6	14.0±6.2	4.97±5.89	8.65±9.79
Landscape diversity[a]	1.09±0.28	1.15±0.35	**1.33±0.07**	**1.46±0.11**	1.77±0.49	1.89±0.16
Woody habitat (m^2)[a]	33.2±124.3	50.0±100.7	129.0±176.8	152.7±189.4	182.1±188.5	308.0±276.9
Plant species richness[a]	**8.3±3.1**	**11.7±4.3**	13.3±5.1	16.5±10.5	11.9±4.5	13.1±6.6
Farming	fresh consumption		fresh consumption		fresh consumption, cider	
Hail nets	some		yes		no	

[a]mean ± SD for orchard size, tree age, major land use categories (% cover in 1 km radius), landscape diversity (Shannon diversity index), local woody habitat cover (in a 20-m zone adjacent to orchard) and local plant species richness; [b]size of target cultivar for SP and GE; size of orchard based on aerial photographs including other cultivars and parcels for SW.

Sources: DWD, 2017. Climate data for Germany. Deutscher Wetterdienst, http://www.dwd.de, accessed 2017-07-05; IDESCAT, 2017. Climatologia. Instituto de Estadística de Cataluña, https://www.idescat.cat, accessed 2017-07-15; SMHI 2018. Climate data for Lund. Swedish Meteorological and Hydrological Institute, https://www.smhi.se, accessed 2018-09-13.

Table A2. Differences in use of agrochemical products between integrated production (IP) and organic (ORG) apple orchards in Spain, Germany and Sweden. Active substances, product examples are given. Products were 'NP' not permitted in apple orchards during study time; '-' not applied; '+' applied rarely (1-2 orchards); '++' applied regularly (>2 orchards).

Active substance	Commercial product name (examples)	Spain		Germany		Sweden	
		IP	ORG	IP	ORG	IP	ORG
Insecticides							
Azadirachtin	NeemAzal-T/S® (Trifolio-M GmbH)	+	++	-	++	NP	NP
Bacillus thuringiensis	XenTari® (Biofa) / Dipel® ES (Cheminova) / Turex 50 WP	+	+	-	++	+	+
Chlorantraniliprole	Coragen® (Dupond)	++	NP	+	NP	NP	NP
Chlorpyrifos	Inaclor 25 PM (Sipcam Inagra) / DurasbanTM 75 WG (Dow AgroScience) / Reldan® E (Dow AgroScience)	++	NP	-	NP	NP	NP
Deltamethrin	Proteus® O-TEQ (Bayer)	++	NP	-	NP	NP	NP
Flonicamid	Teppeki® (ISK Biosciences Europe)	++	NP	++	NP	++	NP
Granulosis virus	Capex® 2 *Adoxophyes orana* gv (Andermatt Biocontrol AG) / Madex® MAX Cydia pomonella gv (Agrinova)	+	++	++	++	++	++
Heterorhabditis bacteriophora	Nemasys G (BASF Agro)	-	-	-	-	+	+
Imidacloprid	Confidor® 20 LS (Bayer), Shardox 20 (Sharda CropChem)	+	NP	-	NP	NP	NP
Indoxacarb	Steward® (Stähler)	+	NP	+	NP	++	NP
Kaolin	Surround® WP (Stähler)	+	+	+	++	NP	NP
Methoxyfenozide	Gladiator® (Dow AgroSciences) / Runner® (Bayer)	+	NP	++	NP	NP	NP
Phosmet	Imidian® WP (BASF Agro)	++	NP	NP	NP	NP	NP
Pirimicarb	Pirimor®, Aphox® (Syngenta)	+	NP	++	NP	NP	NP
Piriproxyphen	Expedient® 10 EC (Sapec Agro)	++	NP	NP	NP	NP	NP
Plant oil	Micula® (Biofa)	NP	NP	+	+	NP	NP
Pyrethrine + oil	Spruzit® Neu (Progema GmbH)	NP	NP	-	+	-	++
Quassin	*Quassia amara* extract	NP	NP	-	++	NP	NP
Spirotetramat	Movento SC® (Bayer)	++	NP	++	NP	+	NP
Steinernema sp.	Capsanem® (Koppert), Nemasys / Nemasys L (BASF Agro)	-	-	-	-	+	+
Tebufenozid	Mimic® (Spiess-Urania)	+	NP	-	NP	NP	NP
Thiacloprid	Calypso® (Bayer) / Proteus O-TEQ (Bayer)	+	NP	++	NP	+	NP
		17	**4**	**10**	**7**	**8**	**5**

Active substance	Commercial product name (examples)	Spain		Germany		Sweden	
		IP	ORG	IP	ORG	IP	ORG
Acaricides							
Abamectine	Vertimec® (Syngenta)	++	NP	NP	NP	+	NP
Acequinocyl	Kanemite® SC (Cheminova)	NP	NP	++	NP	NP	NP
Acetamiprid	Mospilan® SG (Cheminova)	+	NP	-	NP	+	NP
Fenpyroximat	Kiron® (Cheminova)	+	NP	+	NP	+	NP
Hexithiazox	Diabolo SC® (Afrasa)	+	NP	NP	NP	+	NP
Milbemectin	Milbeknock® (Spiess-Urania)	+	NP	++	NP	NP	NP
Paraffin oil	Oviphyt (CCL) / Para Sommer (Cheminova)	++	++	++	++	++	+
Spirodiclofen	Envidor® (Bayer)	+	NP	+	NP	NP	NP
		7	**1**	**5**	**1**	**5**	**1**
Fungicides							
Aureobasidium pullulans	Blossom ProtectTM *Aureobasidium pullulans* (Biofa)	+	+	+	+	NP	NP
Captan	Merpan® 80 WDG (Adama) / Malvin® WG (Stähler)	++	NP	++	NP	NP	NP
Copper(II) hydroxide	e.g. Cuprozin® / Funguran® progress (Spiess-Urania)	++	++	++	++	NP	NP
Dithianon	Delan® WG (BASF)	++	NP	++	NP	++	NP
Lime sulphur	Curatio® (Biofa)	+	++	++	++	-	+
Potassium bicarbonate	e.g. VitiSan® (Biofa)	+	+	-	++	NP	NP
Sulphur	e.g. Stulln® 80% WG (agrostulln GmbH) / Kumulus® WG (BASF)	++	++	++	++	++	++
Trifloxystrobin	Flint® (Bayer)	++	NP	++	NP	NP	NP
Prohexadione calcium	Regalis® Plus (BASF)	++	NP	++	NP	NP	NP
		9	5	8	5	2	2
Herbicides							
Flumioxazin	Vorox® F (Spiess-Urania)	NP	NP	+	NP	NP	NP
Glyphosate	Roundup® (Monsanto) / Touchdown® (Syngenta)	++	NP	++	NP	++	NP
Glufosinate-ammonium	Basta® (Bayer) / Finale® (Bayer)	++	NP	++	NP	NP	NP
		2	**0**	**3**	**0**	**1**	**0**
Total no. of pesticide products		**35**	**10**	**26**	**13**	**16**	**8**

Sources: Farmer and expert interviews, national regulations, spraying reports (SP: 3 IP and 4 ORG; GE: 5 IP and 5 ORG); WOG 2017. Rundschreiben Nr. 02/2017, 2017-01-24 der Württemberg. Obstgenossenschaft Raiffeisen eG, LTZ 2017. Integrierter Pflanzenschutz im Erwerbsobstbau (p. 42); FÖKO & BÖLN 2016. Gesunderhaltung der Kulturpflanzen im ökol. Apfelanbau (p. 40); Jordbruksverket 2017. Växtskyddsmedel 2017 – frukt. Jönköping, Sweden, www.jordbruksverket.se, accessed 2018-06-13.

Table A3. Species list for predator taxa in integrated production (IP) and organic (ORG) apple orchards including abundance by country (Spain (SP), Germany (GE), Sweden (SW)) and management type, dry mass (mg) and energy use (J h^{-1}) based on average summer temperature (mean for SP, GE and SW). Dry mass and energy use were averaged at the taxon level, if species had not been identified ('unid').

ORDER / Family	Genus / species	Author	SP		GE		SW		Total	Dry weight (mg)	Energy use (J h^{-1})
			IP (n=14)	ORG (n=14)	IP (n=15)	ORG (n=15)	IP (n=14)	ORG (n=14)			
ARANEAE											
Agelenidae	unid Agelenidae	C. L. Koch, 1837	0	0	0	2	0	0	2	2.61	0.048
Anyphaenidae	*Anyphaena accentuata*	Walckenaer, 1802	0	0	0	0	1	2	3	5.87	0.076
Anyphaenidae	unid Anyphaenidae	Bertkau, 1878	0	0	7	3	0	0	10	5.87	0.076
Araneidae	*Araniella opisthographa*	Kulczyński, 1905	0	0	8	15	19	20	62	8.86	0.096
Araneidae	*Mangora acalypha*	Walckenaer, 1802	0	2	0	0	0	0	2	0.74	0.024
Araneidae	unid Araneidae	Clerck, 1757	0	2	10	14	0	0	26	2.91	0.051
Clubionidae	*Clubiona*	Latreille, 1804	0	2	0	0	2	2	6	4.74	0.067
Clubionidae	unid Clubionidae	Wagner, 1887	0	0	2	6	0	0	8	4.74	0.067
Dictynidae	*Dictyna arundinacea*	Linnaeus, 1758	0	0	0	0	3	0	3	0.26	0.013
Dictynidae	*Dictyna uncinata*	Thorell, 1856	0	0	3	4	4	1	12	0.42	0.017
Dictynidae	*Lathys humilis*	Blackwall, 1855	0	0	0	0	0	2	2	0.22	0.012
Dictynidae	unid Dictynidae	O. Pickard-Cambridge, 1871	0	4	1	0	0	0	5	0.30	0.014
Linyphiidae	*Araeoncus humilis*	Blackwall, 1841	0	0	0	0	1	0	1	0.18	0.011
Linyphiidae	*Diplostyla concolor*	Wider, 1834	0	0	0	1	0	0	1	0.34	0.015
Linyphiidae	*Dismodicus bifrons*	Blackwall, 1841	0	0	0	0	0	1	1	0.46	0.018
Linyphiidae	*Entelecara acuminata*	Wider, 1834	0	0	0	0	7	8	15	0.21	0.012
Linyphiidae	*Gongylidium rufipes*	Linnaeus, 1758	0	0	0	0	1	0	1	0.34	0.015
Linyphiidae	*Hylyphantes graminicola*	Sundevall, 1830	0	0	0	0	0	1	1	0.29	0.014
Linyphiidae	*Hypomma cornutum*	Blackwall, 1833	0	0	0	0	1	0	1	0.48	0.018
Linyphiidae	*Lepthyphantes*	Menge, 1866	3	4	0	0	0	0	7	0.51	0.019
Linyphiidae	*Tenuiphantes tenuis*	Blackwall, 1852	0	0	1	1	0	1	3	0.24	0.012
Linyphiidae	unid Linyphiidae	Blackwall, 1859	8	2	2	4	2	4	22	0.34	0.015
Mimetidae	*Ero aphana*	Simon, 1881	0	0	1	0	0	0	1	1.55	0.036
Miturgidae	*Zora* sp.	C. L. Koch, 1847	1	0	0	0	0	0	1	1.55	0.036
Philodromidae	*Philodromus*	Walckenaer, 1826	3	23	0	0	27	28	81	3.69	0.058
Philodromidae	*Philodromus albidus*	Kulczyński, 1911	0	0	0	0	0	1	1	3.69	0.058
Philodromidae	*Philodromus aureolus*	Clerck, 1757	0	0	0	1	2	6	9	3.69	0.058

ORDER / Family	Genus / species	Author	SP		GE		SW		Total	Dry weight (mg)	Energy use (J h^{-1})
			IP (n=14)	ORG (n=14)	IP (n=15)	ORG (n=15)	IP (n=14)	ORG (n=14)			
Philodromidae	*Philodromus cespitum*	Walckenaer, 1802	0	0	0	3	1	2	6	2.13	0.043
Philodromidae	*Philodromus praedatus*	O. Pickard-Cambridge, 1871	0	0	0	2	0	0	2	3.69	0.058
Philodromidae	unid Philodromidae	Thorell, 1870	0	0	12	8	0	0	20	3.69	0.058
Salticidae	*Euophrys* sp.	C. L. Koch, 1834	0	0	0	0	1	0	1	0.33	0.015
Salticidae	*Marpissa*	C. L. Koch, 1846	0	0	0	0	1	0	1	1.90	0.040
Salticidae	*Marpissa muscosa*	Clerck, 1757	0	0	0	4	0	0	4	5.09	0.070
Salticidae	*Salticus zebraneus*	C. L. Koch, 1837	0	0	0	0	0	2	2	0.35	0.015
Salticidae	unid Salticidae	Blackwall, 1841	0	2	3	3	0	0	8	1.92	0.040
Tetragnathidae	*Tetragnatha*	Latreille, 1804	0	1	0	0	0	5	6	5.52	0.073
Tetragnathidae	*Tetragnatha dearmata*	Thorell, 1873	0	0	1	0	0	0	1	4.29	0.063
Theridiidae	*Anelosimus*	Simon, 1891	0	5	0	0	0	0	5	0.20	0.011
Theridiidae	*Anelosimus vittatus*	C. L. Koch, 1836	0	0	0	0	2	5	7	1.27	0.032
Theridiidae	*Dipoena*	Thorell, 1869	1	1	0	0	0	0	2	0.11	0.008
Theridiidae	*Enoplognatha ovata*	Clerck, 1757	0	1	0	0	18	6	25	0.66	0.022
Theridiidae	*Neottiura bimaculata*	Linnaeus, 1767	0	0	0	0	0	1	1	0.64	0.022
Theridiidae	*Paidiscura pallens*	Blackwall, 1834	0	0	0	0	3	10	13	0.13	0.009
Theridiidae	*Phylloneta*	Archer, 1950	0	0	0	0	3	6	9	0.41	0.017
Theridiidae	*Phylloneta impressa*	L. Koch, 1881	0	0	2	4	0	0	6	1.65	0.037
Theridiidae	*Platnickina tincta*	Walckenaer, 1802	0	0	1	0	0	2	3	0.64	0.022
Theridiidae	*Robertus*	O. Pickard-Cambridge, 1879	2	6	0	0	0	0	8	0.64	0.022
Theridiidae	*Robertus* sp.	O. Pickard-Cambridge, 1879	0	0	0	0	1	0	1	0.64	0.022
Theridiidae	*Theridion varians*	Hahn, 1833	0	0	2	2	7	0	11	0.73	0.023
Theridiidae	unid Theridiidae	Sundevall, 1833	1	2	20	8	12	17	60	0.64	0.022
Thomisidae	*Diaea dorsata*	Fabricius, 1777	0	0	0	0	1	0	1	3.76	0.059
Thomisidae	*Ozyptila praticola*	C. L. Koch, 1837	0	0	0	0	1	0	1	4.86	0.068
Thomisidae	*Runcinia*	Simon, 1875	1	3	0	0	0	0	4	1.75	0.038
Thomisidae	unid Thomisidae	Sundevall, 1833	0	0	5	6	0	0	11	3.76	0.059
Thomisidae	*Xysticus*	C. L. Koch, 1835	2	4	0	0	2	3	11	4.65	0.066
Thomisidae	*Xysticus audax*	Schrank, 1803	0	0	0	0	0	1	1	4.65	0.066
	unid Araneae		0	3	12	17	0	1	33	0.33	0.015
COLEOPTERA											
Cantharidae	*Cantharis decipiens*	Baudi, 1871	0	0	0	0	0	2	2	15.21	0.127

ORDER / Family	Genus / species	Author	SP		GE		SW		Total	Dry weight (mg)	Energy use (J h^{-1})
			IP (n=14)	ORG (n=14)	IP (n=15)	ORG (n=15)	IP (n=14)	ORG (n=14)			
Cantharidae	*Cantharis fusca*	Linnaeus, 1758	0	0	0	0	4	7	11	18.76	0.149
Cantharidae	*Cantharis livida*	Linnaeus, 1758	0	0	0	0	3	2	5	16.65	0.136
Cantharidae	*Cantharis nigricans*	Muller, 1766	0	0	0	0	0	2	2	15.21	0.127
Cantharidae	*Cantharis pellucida*	Fabricius, 1792	0	0	0	0	0	1	1	15.21	0.127
Cantharidae	*Cantharis rufa*	Linnaeus, 1758	0	0	0	0	1	0	1	15.21	0.127
Cantharidae	*Cantharis* sp.	Linnaeus, 1758	0	0	0	0	0	1	1	10.21	0.094
Cantharidae	*Malthodes marginatus*	Latreille, 1806	0	0	0	0	0	8	8	11.71	0.104
Cantharidae	*Rhagonycha fulva*	Scopoli, 1763	0	1	0	0	0	0	1	3.56	0.042
Cantharidae	*Rhagonycha lignosa*	Muller, 1764	0	0	0	0	1	1	2	3.56	0.042
Cantharidae	*Rhagonycha nigriventris*	Motschulsky, 1860	0	0	0	0	0	4	4	3.56	0.042
Cantharidae	unid Cantharidae		0	0	0	1	0	0	1	11.71	0.104
Coccinellidae	*Adalia bipunctata*	Linnaeus, 1758	0	0	0	0	0	2	2	6.57	0.067
Coccinellidae	*Coccinella septempunctata*	Linnaeus, 1758	0	4	0	0	0	7	11	9.97	0.092
Coccinellidae	Cryptolaemus	Mulsant, 1853	0	5	0	0	0	0	5	0.45	0.009
Coccinellidae	*Exochomus quadripustulatus*	Linnaeus, 1758	0	0	2	1	0	0	3	2.27	0.030
Coccinellidae	*Harmonia axyridis*	Pallas, 1773	0	0	1	3	0	0	4	9.40	0.088
Coccinellidae	*Propylea 14 punctata*	Linnaeus, 1758	0	9	0	0	3	3	15	2.69	0.034
Coccinellidae	*Stethorus*	Weise, 1885	2	0	0	0	0	0	2	0.13	0.003
Coccinellidae	unid Coccinellidae larvae		0	28	2	1	0	1	32	4.80	0.053
Malachiidae	*Colotes maculatus*	Laporte de Castelnau, 1838	0	1	0	0	0	0	1	0.01	0.001
Melyridae	*Dasytes aeratus*	Stephens, 1829	0	0	0	0	0	1	1	3.50	0.042
Salpingidae	*Salpingus planirostris*	Fabricius, 1787	0	0	0	0	1	0	1	3.50	0.042
Staphylinidae	unid Staphylinidae		3	5	1	1	0	0	10	0.42	0.008
DERMAPTERA											
Forficulidae	*Forficula auricularia*	Linnaeus, 1758	0	7	168	122	22	14	333	22.09	0.169
Forficulidae	*Forficula pubescens*	Gené, 1837	1	13	0	0	0	0	14	3.25	0.039
DIPTERA											
Athericidae	unid Athericidae		0	0	3	1	0	0	4	0.62	0.011
Dolichopodidae	*Microphor anomalus*	Meigen, 1824	0	0	0	0	2	17	19	0.17	0.004
Dolichopodidae	unid Dolichopodidae		0	1	2	1	3	1	8	0.35	0.007

ORDER / Family	Genus / species	Author	SP		GE		SW		Total	Dry weight (mg)	Energy use ($J\ h^{-1}$)
			IP (n=14)	ORG (n=14)	IP (n=15)	ORG (n=15)	IP (n=14)	ORG (n=14)			
Dolichopodidae	unid Microphorinae		0	0	4	2	0	0	6	0.53	0.010
Empididae	*Empis caudatula*	Loew, 1867	0	0	0	0	7	11	18	0.24	0.005
Empididae	*Empis nigripes*	Fabricius, 1794	0	0	0	0	0	1	1	0.29	0.006
Empididae	*Empis nuntia*	Meigen, 1838	0	0	0	0	5	2	7	0.48	0.009
Empididae	*Empis* sp.	Linnaeus, 1758	0	0	0	0	3	1	4	0.34	0.007
Empididae	*Hilara albipennis*	von Roser, 1840	0	0	0	0	0	2	2	0.20	0.005
Empididae	*Hilara fuscipes*	Fabricius, 1794	0	0	0	0	0	2	2	0.62	0.011
Empididae	*Hilara longivittata*	Zetterstedt, 1842	0	0	0	0	0	3	3	0.26	0.006
Empididae	*Hilara maura*	Fabricius, 1776	0	0	0	0	0	2	2	0.63	0.011
Empididae	*Hilara quadrula*	Chvala, 2002	0	0	0	0	1	0	1	0.43	0.008
Empididae	*Rhamphomyia umbripennis*	Meigen, 1822	0	0	0	0	0	3	3	0.39	0.008
Empididae	unid Empididae		0	4	0	0	0	0	4	0.71	0.012
Hybotidae	*Bicellaria spuria*	Fallen, 1816	0	0	0	0	0	2	2	0.10	0.003
Hybotidae	*Drapetis incompleta*	Collin, 1926	0	0	0	0	0	1	1	0.03	0.001
Hybotidae	*Euthyneura myrtilli*	Macquart, 1836	0	0	0	0	0	2	2	0.09	0.003
Hybotidae	*Platypalpus*	Macquart, 1827	0	0	0	0	1	16	17	0.27	0.006
Hybotidae	*Platypalpus agilis*	Meigen, 1822	0	0	0	0	2	10	12	0.32	0.007
Hybotidae	*Platypalpus annulipes*	Meigen, 1822	0	0	0	0	2	0	2	0.26	0.006
Hybotidae	*Platypalpus cursitans*	Fabricius, 1775	0	0	0	0	0	4	4	0.65	0.012
Hybotidae	*Platypalpus interstinctus*	Collin, 1926	0	0	0	0	1	0	1	0.13	0.003
Hybotidae	*Platypalpus leucocephalus*	von Roser, 1840	0	0	0	0	1	2	3	0.27	0.006
Hybotidae	*Platypalpus longicornis*	Meigen, 1822	0	0	0	0	1	1	2	0.21	0.005
Hybotidae	*Platypalpus longiseta*	Zetterstedt, 1842	0	0	0	0	4	2	6	0.17	0.004
Hybotidae	*Platypalpus minutus*	Meigen, 1804	0	0	0	0	3	1	4	0.22	0.005
Hybotidae	*Platypalpus pallidiventris*	Meigen, 1822	0	0	0	0	6	2	8	0.19	0.005
Hybotidae	*Platypalpus verralli*	Collin, 1926	0	0	0	0	2	1	3	0.29	0.006
Hybotidae	unid Hybotidae		0	0	0	0	0	2	2	0.22	0.005
Micropezidae	unid Micropezidae		0	0	0	0	1	0	1	0.32	0.007
Rhagionidae	unid Rhagionidae		0	0	2	0	0	0	2	0.24	0.005
Syrphidae	unid Syrphidae larvae		0	1	0	0	0	0	1	6.91	0.070

ORDER / Family	Genus / species	Author	SP		GE		SW		Total	Dry weight (mg)	Energy use (J h^{-1})
			IP (n=14)	ORG (n=14)	IP (n=15)	ORG (n=15)	IP (n=14)	ORG (n=14)			
HETEROPTERA											
Anthocoridae	*Anthocoris*	Fallen, 1814	0	1	0	0	1	0	2	0.53	0.010
Anthocoridae	*Anthocoris nemoralis*	Fabricius, 1794	0	0	1	0	0	0	1	0.53	0.010
Anthocoridae	*Anthocoris nemorum*	Linnaeus, 1761	0	0	0	0	2	3	5	0.53	0.010
Anthocoridae	*Orius*	Wolff, 1811	0	2	13	104	0	0	119	0.16	0.004
Anthocoridae	*Orius minutus*	Linnaeus, 1758	0	0	4	8	1	1	14	0.05	0.002
Anthocoridae	unid Anthocoridae		0	0	0	10	0	0	10	0.16	0.004
Miridae	*Campylomma*	Reuter, 1878	20	19	0	0	0	0	39	0.16	0.004
Miridae	*Campylomma verbasci*	Meyer-Dür, 1843	0	0	0	2	0	0	2	0.16	0.004
Miridae	*Deraeocoris*	Kirschbaum, 1856	0	0	0	4	0	0	4	0.63	0.011
Miridae	*Heterotoma planicornis*	Pallas, 1772	0	0	15	47	0	0	62	0.10	0.003
Miridae	*Plagiognathus arbustorum*	Fabricius, 1794	0	0	0	3	0	0	3	1.22	0.019
Nabidae	*Himacerus apterus*	Fabricius, 1798	0	0	2	0	0	0	2	1.41	0.021
Nabidae	*Nabis* sp.	Latreille, 1802	0	0	0	0	1	0	1	4.24	0.048
Nabidae	unid Nabidae		0	1	0	0	0	0	1	2.95	0.037
NEUROPTERA											
Chrysopidae	*Chrysoperla carnea*	Stephens, 1836	0	0	0	0	5	7	12	3.88	0.045
Chrysopidae	unid Chrysopidae		1	2	0	1	0	0	4	3.88	0.045
Coniopterygidae	*Coniopteryx tineiformis*	Curtis, 1834	0	0	0	0	0	1	1	3.88	0.045
Hemerobiidae	*Micromus variegatus*	Fabricius, 1793	0	0	0	0	0	1	1	3.88	0.045
	unid Neuroptera		1	2	5	3	0	1	12	3.88	0.045
OPILIONES											
	unid Opiliones		0	0	6	7	17	1	31	1.37	0.020
Phalangiidae	unid Phalangiidae		0	1	1	0	0	0	2	3.47	0.041
			50	174	325	430	230	300	1509	360.56	4.564

Sources: World Spider Catalogue 2018, http://www.wsc.nmbe.ch, accessed 2017-07-16; Fauna Europaea, https://fauna-eu.org, accessed 2017-07-15

Table A4. Effects of country (Spain (SP), Germany (GE) and Sweden (SW)) and management type (integrated production (IP); organic management (ORG)) on abundance of predator taxa to supplement Figure 2. Statistical results derived from GLM (F-values for quasi-Poisson, χ^2 for Poisson and negative binomial; ANOVA type III) and post-hoc tests with Tukey contrasts indicating direction of differences between countries. Significant results ($P < 0.05$) in bold.

Taxon	Explanatory variable	Statistics (F/ χ^2, df, *P* value, post-hoc)	Deviance (anova.glm)	Deviance explained by model (%)
All	**Country**	**$\chi^2_{2,80} = 48.6$, $P < 0.001$ (SP < GE, SW)**	**45.9**	43.4
	Management	**$\chi^2_{1,80} = 18.4$, $P < 0.001$ (IP < ORG)**	**14.8**	
	Country × Management	**$\chi^2_{2,80} = 9.8$, $P = 0.008$**	**9.8**	
Araneae	**Country**	**$\chi^2_{2,80} = 33.0$, $P < 0.001$ (SP < GE, SW)**	**31.3**	32.4
	Management	**$\chi^2_{1,80} = 8.4$, $P = 0.004$ (IP < ORG)**	**5.6**	
	Country × Management	**$\chi^2_{2,80} = 7.3$, $P = 0.026$**	**7.3**	
Coleoptera	Country	$\chi^2_{2,80} = 4.7$, $P = 0.092$	40.8	29.52
	Management	**$\chi^2_{1,80} = 22.3$, $P < 0.001$ (IP < ORG)**	**52**	
	Country × Management	**$\chi^2_{2,80} = 10.5$, $P = 0.005$**	**10.5**	
Dermaptera	**Country**	**$F_{2,80} = 28.6$, $P < 0.001$ (GE > SP, SW)**	**353.73**	53.25
	Management	$F_{1,80} = 1.5$, $P = 0.225$	3.5	
	Country × Management	$F_{2,80} = 3.0$, $P = 0.057$	26.7	
Diptera	**Country**	**$\chi^2_{2,80} = 36.7$, $P < 0.001$ (GE < SW)**	**80.8**	58.5
	Management	**$\chi^2_{1,80} = 4.1$, $P = 0.041$**	**1.9**	
	Country × Management	**$\chi^2_{2,80} = 10.7$, $P = 0.005$**	**10.7**	
Heteroptera	**Country**	**$\chi^2_{2,80} = 8.6$, $P = 0.014$**	**54.1**	44.9
	Management	$\chi^2_{1,80} = 1.9$, $P = 0.165$	4.8	
	Country × Management	$\chi^2_{2,80} = 5.8$, $P = 0.056$	5.8	
Neuroptera	Country	$\chi^2_{2,80} = 1.6$, $P = 0.565$	4.3	7.5
	Management	$\chi^2_{1,80} = 0.9$, $P = 0.336$	1.2	
	Country × Management	$\chi^2_{2,80} = 1.3$, $P = 0.527$	1.3	
Opiliones	**Country**	**$\chi^2_{2,80} = 23.9$, $P < 0.001$ (SP < GE)**	**19.3**	33.1
	Management	$\chi^2_{1,80} = 0.1$, $P = 0.740$	7.1	
	Country × Management	**$\chi^2_{2,80} = 11.5$, $P = 0.003$**	**11.5**	

Table A5. Species list of plants including presence by country.

No.	Species	Author	Family	Spain	Germany	Sweden
1	*Abies alba*	Mill..	Pinaceae	0	1	0
2	*Acer campestre*	L.	Aceraceae	0	1	0
3	*Acer platanoides*	L.	Aceraceae	0	0	1
4	*Acer pseudoplatanus*	L.	Aceraceae	0	1	0
5	*Achillea millefolium*	L.	Asteraceae	0	1	1
6	*Aegopodium podagraria*	L.	Apiaceae	0	1	1
7	*Alliaria petiolata*	(M. Bieb.) Cavara & Grande	Brassicaceae	0	0	1
8	*Alnus glutinosa*	(L.) J. Gaertn	Betulaceae	0	1	0
9	*Alnus incana*	(L.) Moench	Betulaceae	0	0	1
10	*Alnus* sp.	Mill.	Betulaceae	0	0	1
11	*Amelanchier lamarckii cf. canadensis*	F. G. Schroed.	Rosaceae	0	1	0
12	*Anagallis arvensis*	L.	Primulaceae	1	1	0
13	*Anchusa hybrida*	Ten.	Boraginaceae	1	0	0
14	*Anthemis* sp.	L.	Asteraceae	1	0	0
15	*Anthriscus sylvestris*	(L.) Hoffm.	Apiaceae	0	0	1
16	*Arabidopsis thaliana*	(L.) Heynh.	Brassicaceae	0	1	1
17	*Arabis glabra*	L.	Brassicaceae	0	0	1
18	*Arenaria serpyllifolia*	L.	Caryophyllaceae	0	1	0
19	*Artemisia vulgaris*	L.	Asteraceae	0	0	1
21	*Athyrium filix-femina*	(L.) Roth	Dryopteridaceae	0	1	0
22	*Atriplex hortensis*	L.	Chenopodiaceae	0	1	0
23	*Barbarea intermedia*	Boreau	Brassicaceae	0	1	0
24	*Bellis perennis*	L.	Asteraceae	0	1	1
25	*Beta vulgaris*	L.	Chenopodiaceae	1	0	0
26	*Betula pendula*	Roth	Betulaceae	0	1	1
27	*Borago officinalis*	L.	Boraginaceae	1	0	0
28	*Brassica napus*	L.	Brassicaceae	0	1	0
29	*Bryonia dioica*	Jacq.	Cucurbitaceae	1	0	0
30	*Calendula officinalis*	L.	Asteraceae	1	0	0
31	*Capsella bursa-pastoris*	(L.) Med.	Brassicaceae	1	1	1
32	*Cardamine pratensis*	L.	Brassicaceae	0	1	0
33	*Cardaria draba*	L.	Brassicaceae	1	0	0
34	*Carpinus betulus*	L.	Betulaceae	0	1	1
35	*Centaurea scabiosa*	L.	Asteraceae	0	0	1
36	*Cerastium fontanum*	Baumg.	Caryophyllaceae	0	1	1
37	*Cerastium glomeratum*	Thuill.	Caryophyllaceae	1	1	0
38	*Cerastium holosteoides*	Fr.	Caryophyllaceae	0	1	0
39	*Cerastium* sp.	L.	Caryophyllaceae	0	1	1
40	*Cerastium* sp.2			0	0	1
41	*Chelidonium majus*	L.	Papaveraceae	1	0	0
42	*Chenopodium* sp.	L.	Amaranthaceae	1	0	0
43	*Circaea intermedia*	Ehrh.	Onagraceae	0	1	0
44	*Cirsium arvense*	(L.) Scop.	Asteraceae	0	1	1

No.	Species	Author	Family	Spain	Germany	Sweden
45	*Clematis vitalba*	L.	Ranunculaceae	0	1	0
46	*Convolvulus arvensis*	L.	Convolvulaceae	1	1	0
47	*Convolvulus* sp.	L.	Convolvulaceae	1	0	0
48	*Conyza* sp.	L.	Asteraceae	1	0	0
49	*Cornus sanguinea*	L.	Cornaceae	0	1	0
50	*Corylus avellana*	L.	Betulaceae	0	1	1
51	*Crepis capillaris*	(L.) Wallr.	Asteraceae	0	1	0
52	*Crepis* sp.	L.	Asteraceae	1	1	1
53	*Crepis* sp.2	L.	Asteraceae	1	0	0
54	*Daucus carota*	L.	Apiaceae	0	1	0
55	*Daucus* sp.	L.	Apiaceae	1	0	0
56	*Diplotaxis erucoides*	(L.) DC.	Brassicaceae	1	0	0
57	*Diplotaxis tenuifolia*	(L.) DC.	Brassicaceae	0	1	0
58	*Epilobium montanum*	L.	Onagraceae	0	0	1
60	*Equisetum arvense*	L.	Equisetaceae	0	1	1
61	*Equisetum pratense*	Ehrh.	Equisetaceae	0	0	1
62	*Erigeron canadensis*	L.	Asteraceae	0	1	0
63	*Erophila verna*	L.	Brassicaceae	0	0	1
64	*Eruca vesicaria*	(L.) Cav.	Brassicaceae	1	0	0
65	*Erucastrum nastrutiifolium*	(Poir.) O. E. Schulz	Brassicaceae	1	0	0
66	*Erucastrum* sp.	C. Presl	Brassicaceae	1	0	0
67	*Euonymus europaeus*	L.	Celastraceae	0	1	0
68	*Euphorbia cyparissias*	L.	Euphorbiaceae	0	1	0
69	*Euphorbia falcata*	L. n. cons.	Euphorbiaceae	1	0	0
70	*Euphorbia helioscopia*	L.	Euphorbiaceae	0	1	0
71	*Euphorbia* sp.	L.	Euphorbiaceae	1	0	0
72	*Fagopyrum esculentum*	Moench	Polygonaceae	0	1	0
73	*Fagus sylvatica*	L.	Fagaceae	0	1	1
74	*Fallopia japonica*	(Houtt.) Ronse Decr.	Polygonaceae	0	1	0
75	*Ficaria verna*	Huds.	Ranunculaceae	0	1	0
76	*Filipendula ulmaria*	(L.) Maxim.	Rosaceae	0	1	1
77	*Foeniculum vulgare*	Mill.	Apiaceae	1	0	0
78	*Forsythia × intermedia*	Zabel	Oleaceae	0	1	0
79	*Fragaria vesca*	L.	Rosaceae	0	0	1
80	*Fraxinus excelsior*	L.	Oleaceae	0	1	1
81	*Fumaria officinalis*	L.	Papaveraceae	1	0	0
82	*Galeopsis tetrahit*	L.	Lamiaceae	0	1	0
83	*Galinsoga quadriradiata*	Ruiz & Pav.	Asteraceae	0	1	0
84	*Galium album*	Mill.	Rubiaceae	0	1	0
85	*Galium aparine*	L.	Rubiaceae	1	1	1
86	*Galium mollugo*	L.	Rubiaceae	0	1	0
87	*Galium palustre*	L.	Rubiaceae	0	1	0
88	*Galium* sp.	L.	Rubiaceae	1	1	1
89	*Galium sylvaticum*	L.	Rubiaceae	0	1	0
90	*Galium verum*	L.	Rubiaceae	0	0	1

No.	Species	Author	Family	Spain	Germany	Sweden
91	*Geranium columbinum*	L.	Geraniaceae	0	1	0
92	*Geranium dissectum*	L.	Geraniaceae	0	1	0
93	*Geranium molle*	L.	Geraniaceae	1	0	1
94	*Geranium pyrenaicum*	Burm. n. cons. prop.	Geraniaceae	0	1	1
95	*Geranium robertianum*	L.	Geraniaceae	0	1	1
96	*Geranium* sp.	L.	Geraniaceae	1	1	0
97	*Geranium* sp.2	L.	Geraniaceae	1	0	0
98	*Geum rivale*	L.	Rosaceae	0	0	1
99	*Geum* sp.	L.	Rosaceae	0	0	1
100	*Geum urbanum*	L.	Rosaceae	0	1	1
101	*Glechoma hederacea*	L.	Lamiaceae	0	1	1
102	*Glechoma hederacea* subsp. *hirsuta*	Waldst. & Kit.	Lamiaceae	0	1	0
103	*Hedera helix*	L.	Araliaceae	0	1	0
104	*Hedera* sp.	L.	Araliaceae	1	0	0
105	*Heracleum mantegazzianum*	Sommier & Levier	Apiaceae	0	0	1
106	*Heracleum sphondylium*	L.	Apiaceae	0	0	1
107	*Hieracium* sp.	L.	Asteraceae	0	1	0
108	*Hypericum maculatum*	Crantz	Clusiaceae	0	0	1
109	*Hypericum perforatum*	L.	Clusiaceae	0	0	1
110	*Impatiens glanulifera*	Royle	Balsaminaceae	0	1	0
111	*Impatiens noli-tangere*	L. n. cons.	Balsaminaceae	0	1	0
113	*Juglans regia*	L.	Juglandaceae	0	1	0
114	*Lactuca serriola*	L.	Asteraceae	1	0	0
116	*Lamium album*	L.	Lamiaceae	0	1	1
117	*Lamium amplexicaule*	L.	Lamiaceae	1	0	1
118	*Lamium galeobdolon*	Huds.	Lamiaceae	0	1	1
119	*Lamium hybridum*	Vill.	Lamiaceae	1	0	0
120	*Lamium purpureum*	L.	Lamiaceae	0	0	1
121	*Lamium* sp.	L.	Lamiaceae	1	0	1
122	*Lapsana communis*	L.	Asteraceae	0	0	1
123	*Larix decidua*	Mill.	Pinaceae	0	1	0
124	*Lathyrus pratensis*	L.	Fabaceae	0	1	0
125	*Leucanthemum* sp.	Mill.	Asteraceae	0	1	0
126	*Leucanthemum* vulgare	Lam.	Asteraceae	0	1	0
127	*Ligustrum vulgare*	L.	Oleaceae	0	1	0
128	*Lobullaria maritima*	(L.) Desv.	Brassicaceae	1	0	0
129	*Lonicera periclymenum*	L.	Caprifoliaceae	0	0	1
130	*Lonicera* sp.	L.	Caprifoliaceae	0	0	1
131	*Lonicera xylosteum*	L.	Caprifoliaceae	0	1	0
132	*Lotus corniculatus*	L.	Fabaceae	0	1	0
133	*Lupinus* sp.	L.	Fabaceae	0	1	0
134	*Maianthemum bifolium*	(L.) F.W.Schmidt	Asparagaceae	0	0	1
135	*Malus domestica*	Mill.	Rosaceae	0	1	1
136	*Malva sylvestris*	L.	Malvaceae	1	0	0

No.	Species	Author	Family	Spain	Germany	Sweden
137	*Mantisalca salmantica*	(L.) Briq. & Cavill.	Asteraceae	1	0	0
138	*Marrubium vulgare*	L.	Lamiaceae	1	0	0
139	*Matricaria chamomilla*	L.	Asteraceae	1	1	0
140	*Medicago falcata*	L.	Fabaceae	1	1	0
141	*Medicago lupulina*	L.	Fabaceae	0	1	1
142	*Medicago sativa*	L.	Fabaceae	1	1	1
143	*Medicago* sp.	L.	Fabaceae	1	0	1
144	*Mentha arvensis*	L.	Lamiaceae	0	1	0
145	*Mercurialis perennis*	L.	Euphorbiaceae	0	1	0
146	*Moehringia trinervia*	(L.) Clairv.	Caryophyllaceae	0	0	1
147	*Myosotis arvensis*	(L.) Hill	Boraginaceae	0	1	1
148	*Myosotis* sp.	L.	Boraginaceae	0	1	0
149	*Olea europaea*	L.	Oleaceae	1	0	0
150	*Onobrychis viciifolia*	Scop.	Fabaceae	0	1	0
151	*Papaver argemone*	L.	Papaveraceae	0	0	1
152	*Papaver rhoeas*	L.	Papaveraceae	1	1	0
153	*Persicaria maculosa*	Gray n. cons.	Polygonaceae	0	1	0
154	*Petasites hybridus*	(L.) G. Gaertn. et al	Asteraceae	0	0	1
155	*Phacelia tanacetifolia*	Benth.	Boraginaceae	0	1	0
156	*Picea abies*	(L.) H.Karst.	Pinaceae	0	1	0
157	*Picris* sp.	L.	Asteraceae	1	0	0
158	*Pilosella officinarum*	L.	Asteraceae	0	0	1
159	*Plantago conoronopus*	L.	Plantaginaceae	1	0	0
160	*Plantago lanceolata*	L.	Plantaginaceae	1	1	1
161	*Plantago major*	L.	Plantaginaceae	0	1	1
162	*Plantago media*	L.	Plantaginaceae	1	1	0
163	*Plantago* sp.	L.	Plantaginaceae	1	0	0
164	*Polygonatum multiflorum*	(L.) All.	Asparagaceae	0	0	1
165	*Polygonum aviculare*	L.	Polygonaceae	1	1	1
166	*Polygonum* sp.	L. n. cons.	Polygonaceae	1	0	0
167	*Potentilla anserina*	L.	Rosaceae	0	1	0
168	*Potentilla reptans*	L.	Rosaceae	1	1	1
169	*Potentilla* sp.	L.	Rosaceae	0	0	1
170	*Primula veris*	L.	Primulaceae	0	0	1
171	*Prunus avium*	L.	Rosaceae	0	1	1
172	*Prunus domestica* subsp. *syriaca*	(Borkh.) Janch. ex Mansf.	Rosaceae	0	1	0
173	*Prunus* sp.	L.	Rosaceae	1	0	0
174	*Prunus spinosa*	L.	Rosaceae	0	1	0
175	*Pteridium* sp.		Dennstaedtiaceae	0	0	1
176	*Pyrus communis*	L.	Rosaceae	0	1	0
177	*Quercus petraea*	(Mattuschka) Liebl.	Fagaceae	0	1	0
178	*Quercus robur*	L.	Fagaceae	0	1	1
179	*Ranunculus arcris*	L.	Ranunculaceae	0	1	0
180	*Ranunculus bulbosus*	L.	Ranunculaceae	0	0	1
182	*Ranunculus repens*	L.	Ranunculaceae	0	1	1

No.	Species	Author	Family	Spain	Germany	Sweden
183	*Ranunculus* sp.	L.	Ranunculaceae	1	0	1
184	*Fallopia japonica*	(Houtt.) Ronse Decr.	Polygonaceae	0	1	0
185	*Ribes alpinum*	L.	Grossulariaceae	0	0	1
186	*Rosa* sp.	L. n. cons.	Rosaceae	0	1	1
187	*Rubia peregrina*	L.	Rubiaceae	1	0	0
188	*Rubus caesius*	L.	Rosaceae	0	0	1
189	*Rubus fruticosus*	L. n. cons.	Rosaceae	0	1	0
190	*Rubus idaeus*	L.	Rosaceae	0	0	1
191	*Rubus* sp.	L.	Rosaceae	0	1	1
192	*Rubus ulmifolius*	Schott	Rosaceae	1	0	0
193	*Rumex acetosa*	L. n. cons.	Polygonaceae	0	0	1
194	*Rumex crispus*	L.	Polygonaceae	0	1	1
195	*Rumex obtusifolius*	L.	Polygonaceae	0	1	1
196	*Rumex sanguineus*	L.	Polygonaceae	0	1	0
197	*Rumex* sp.	L.	Polygonaceae	1	0	0
198	*Salix caprea*	L.	Salicaceae	0	1	0
199	*Salix matsudana* 'Tortuosa'	L.	Salicaceae	0	1	0
200	*Salix* sp.	L. n. cons.	Salicaceae	0	0	1
201	*Salix viminalis*	L.	Salicaceae	0	1	0
202	*Sambucus nigra*	L.	Adoxaceae	0	1	1
203	*Saponaria officinalis*	L.	Caryophyllaceae	0	0	1
204	*Scabiosa columbaria*	L.	Caprifoliaceae	0	1	0
205	*Senecio* sp.	L.	Asteraceae	0	0	1
206	*Senecio vulgaris*	L.	Asteraceae	1	1	1
207	*Sherardia arvensis*	L.	Rubiaceae	1	1	0
208	*Silene* sp.	L. n. cons.	Caryophyllaceae	0	1	0
209	*Silybum marianum*	(L.) Gaertn.	Asteraceae	1	0	0
210	*Solanum dulcamara*	L.	Solanaceae	0	1	0
211	*Solanum nigrum*	L.	Solanaceae	1	0	0
212	*Solidago canadensis*	L.	Asteraceae	0	1	0
213	*Sonchus oleraceus*	L.	Asteraceae	0	1	0
214	*Sonchus* sp.	L.	Asteraceae	1	0	0
215	*Sorbus aucuparia*	L.	Rosaceae	0	0	1
216	*Stachys sylvatica*	L.	Lamiaceae	0	1	0
217	*Stellaria holostea*	L.	Caryophyllaceae	0	0	1
218	*Stellaria longifolia*	Muhl. ex Willd.	Caryophyllaceae	0	0	1
219	*Stellaria media*	(L.) Vill.	Caryophyllaceae	0	1	1
220	*Stellaria* sp.	L.	Caryophyllaceae	0	1	0
221	*Symphoricarpus albus*	(L.) S.F.Blake	Caprifoliaceae	0	1	0
222	*Taraxacum officinale* agg.		Asteraceae	1	1	0
223	*Taraxacum* sp.	F.H.Wigg. n. cons.	Asteraceae	0	0	1
224	*Trientalis europaea*	L. n. cons.	Primulaceae	0	0	1
225	*Trifolium campestre*	Schreb.	Fabaceae	0	1	1
226	*Trifolium dubium*	Sibth.	Fabaceae	0	1	1
227	*Trifolium medium*	L.	Fabaceae	0	0	1

No.	Species	Author	Family	Spain	Germany	Sweden
228	*Trifolium pratense*	L.	Fabaceae	0	1	0
229	*Trifolium repens*	L.	Fabaceae	0	1	1
230	*Trifolium* sp.	L.	Fabaceae	1	1	1
231	*Trifolium* sp.2	L.	Fabaceae	1	0	0
232	*Trifolium* sp.3	L.	Fabaceae	1	0	0
233	*Tripleurospermum maritimum* subsp. *inodorum*	(Merat) M.Lainz	Asteraceae	0	1	0
234	*Ulmus glabra*	Huds.	Ulmaceae	0	1	1
235	*Urtica dioica*	L.	Urticaceae	1	1	1
236	*Valerianella locusta*	(L.) Laterr.	Caprifoliaceae	0	1	0
237	*Veronica anagallis aquatica*	L.	Plantaginaceae	0	1	0
238	*Veronica arvensis*	L.	Plantaginaceae	1	1	0
239	*Veronica chamaedrys*	L.	Plantaginaceae	0	1	1
240	*Veronica filiformis*	Sm.	Plantaginaceae	0	1	0
241	*Veronica hederifolia*	L.	Plantaginaceae	0	1	1
242	*Veronica persica*	Poir.	Plantaginaceae	0	1	1
243	*Veronica polita*	Fr.	Plantaginaceae	0	1	0
244	*Veronica serpyllifolia*	L.	Plantaginaceae	0	0	1
245	*Veronica* sp.	L.	Plantaginaceae	1	1	1
246	*Veronica* sp.2	L.	Plantaginaceae	1	0	0
248	*Veronica verna*	L.	Plantaginaceae	0	0	1
249	*Viburnum opulus*	L.	Adoxaceae	0	1	0
250	*Vicia cracca*	L.	Fabaceae	0	1	1
251	*Vicia hirsuta*	(L.) Gray	Fabaceae	0	0	1
252	*Vicia sativa*	L.	Fabaceae	0	0	1
253	*Vicia sepium*	L.	Fabaceae	0	1	1
254	*Vicia* sp.	L.	Fabaceae	1	1	1
255	*Viola arvensis*	Murray	Violaceae	0	0	1
256	*Viola* sp.	L.	Violaceae	0	1	0
257	*Weigelia* sp.	Thunb.	Caprifoliaceae	0	1	0

Figure A1. Species richness of predatory arthropods in integrated production (IP) and organic (ORG) apple orchards in Spain (SP), Germany (GE) and Sweden (SW).

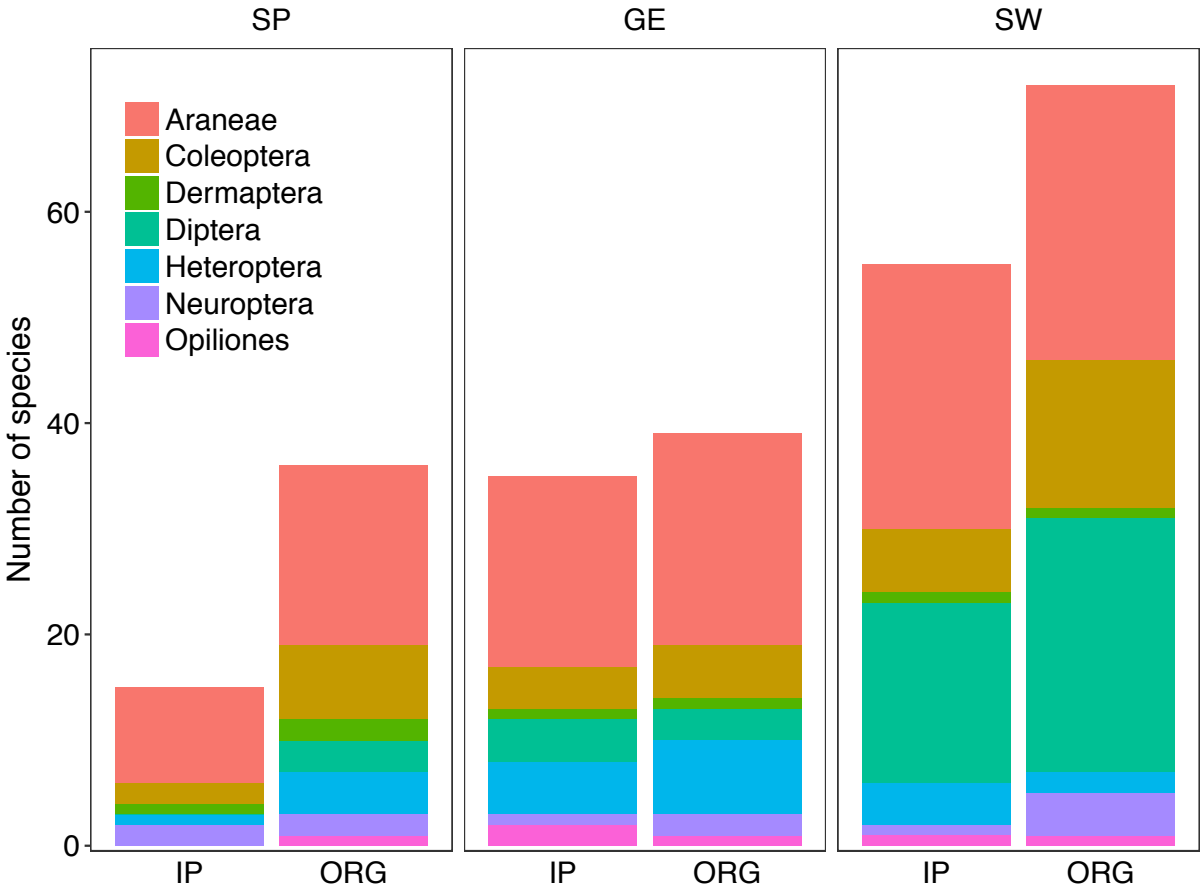

Figure A2. Response (A) of Heteroptera to % orchard cover in a 1-km-radius, (B) of Heteroptera to local plant species richness, and (C) of all predators to % orchard cover in integrated production (IP) and organic management (ORG) in Spain. Graphs are shown for significant local and landscape effects (glm, Table 1) but linear models are fit using the function 'rlm' from the 'MASS' package (robust regression using an M estimator with 95% confidence region). Note: plant species richness in SP differed significantly between ORG and IP (Table A1).

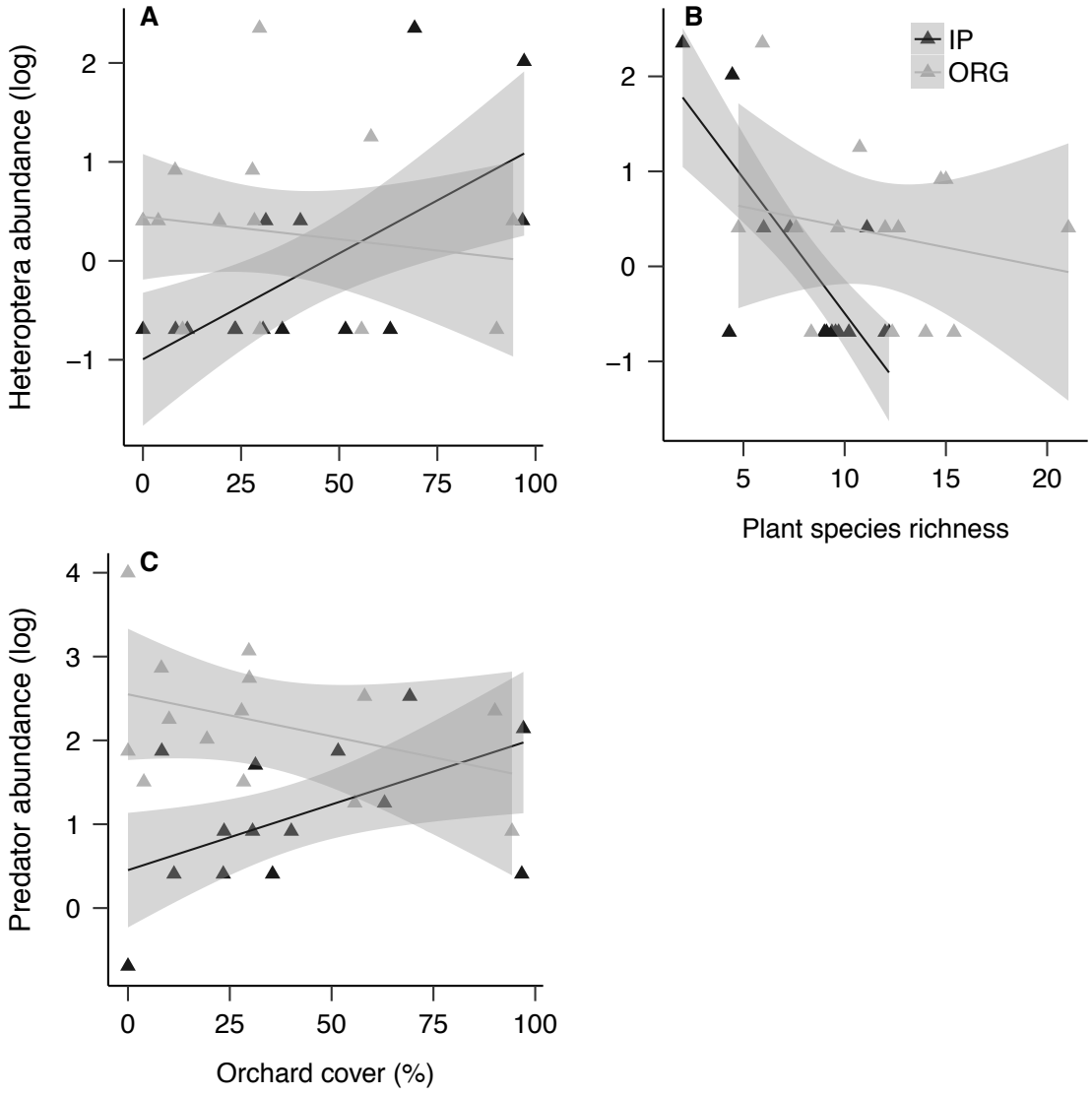

Figure A3. Predator biomass distribution in integrated production (IP) and organic (ORG) apple orchards in Spain (SP), Germany (GE) and Sweden (SW).

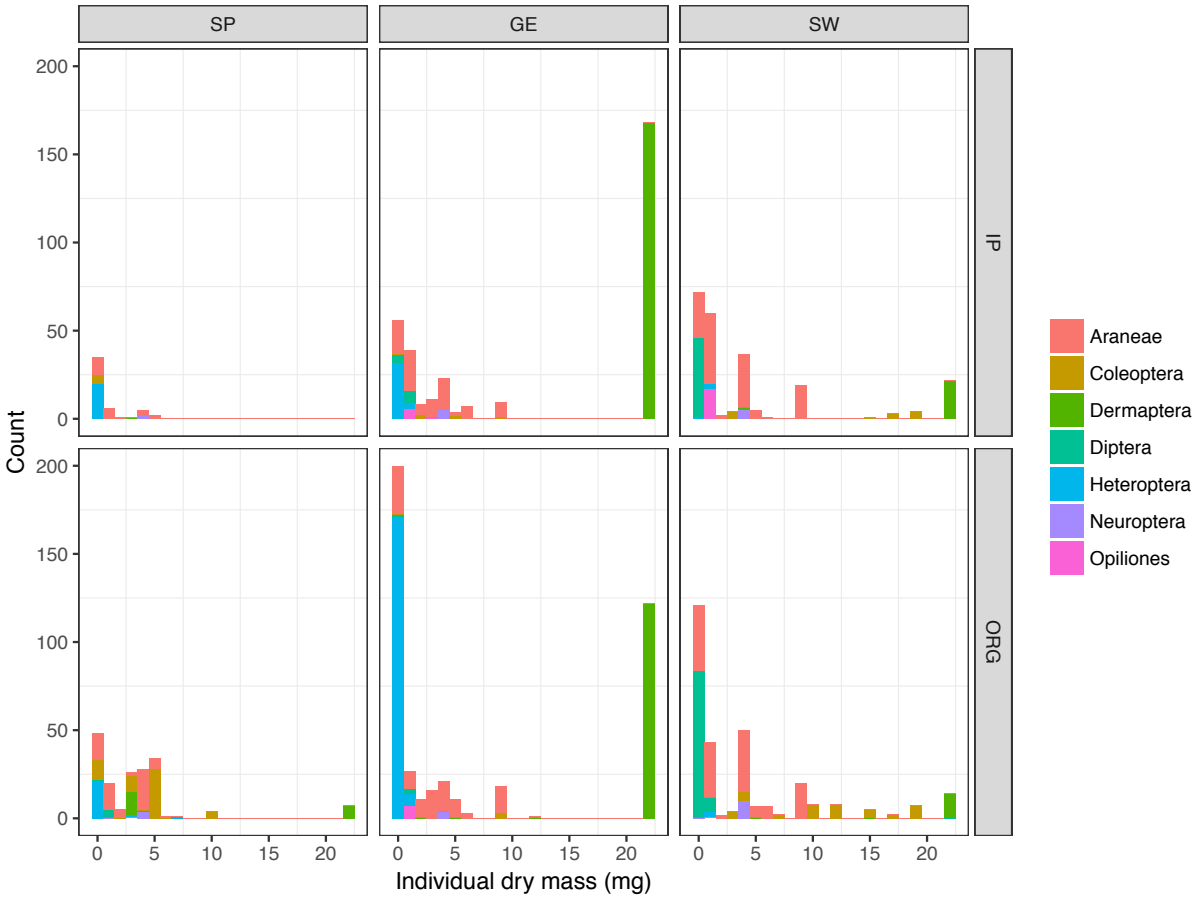

Figure A4. Correlation chart of variables included in the predator analysis for Spanish orchards. Scatterplot of total abundance (number of individuals per 24 trees) of Araneae, Coleoptera, Dermaptera, Diptera, Heteroptera, Neuroptera, Opiliones, total dry body mass (BodyMass, mg) and total energy use (EnergyUse, J h^{-1}), cover of woody habitats (WoodyHab, m^2) in a 20 m radius from the orchard edge, cover (%) of different land use types (see Table A1) in the surrounding of the orchard (1 km radius), landscape heterogeneity (Shannon's Diversity Index, SHDI) and total plant species richness (TotPlant). Lower panels show scatterplots with a smoother added to visualize the patterns, panels in the middle show a histogram of each variable and upper panels contain Spearman's correlation coefficients (r) with *P*-values (red for $P < 0.05$).

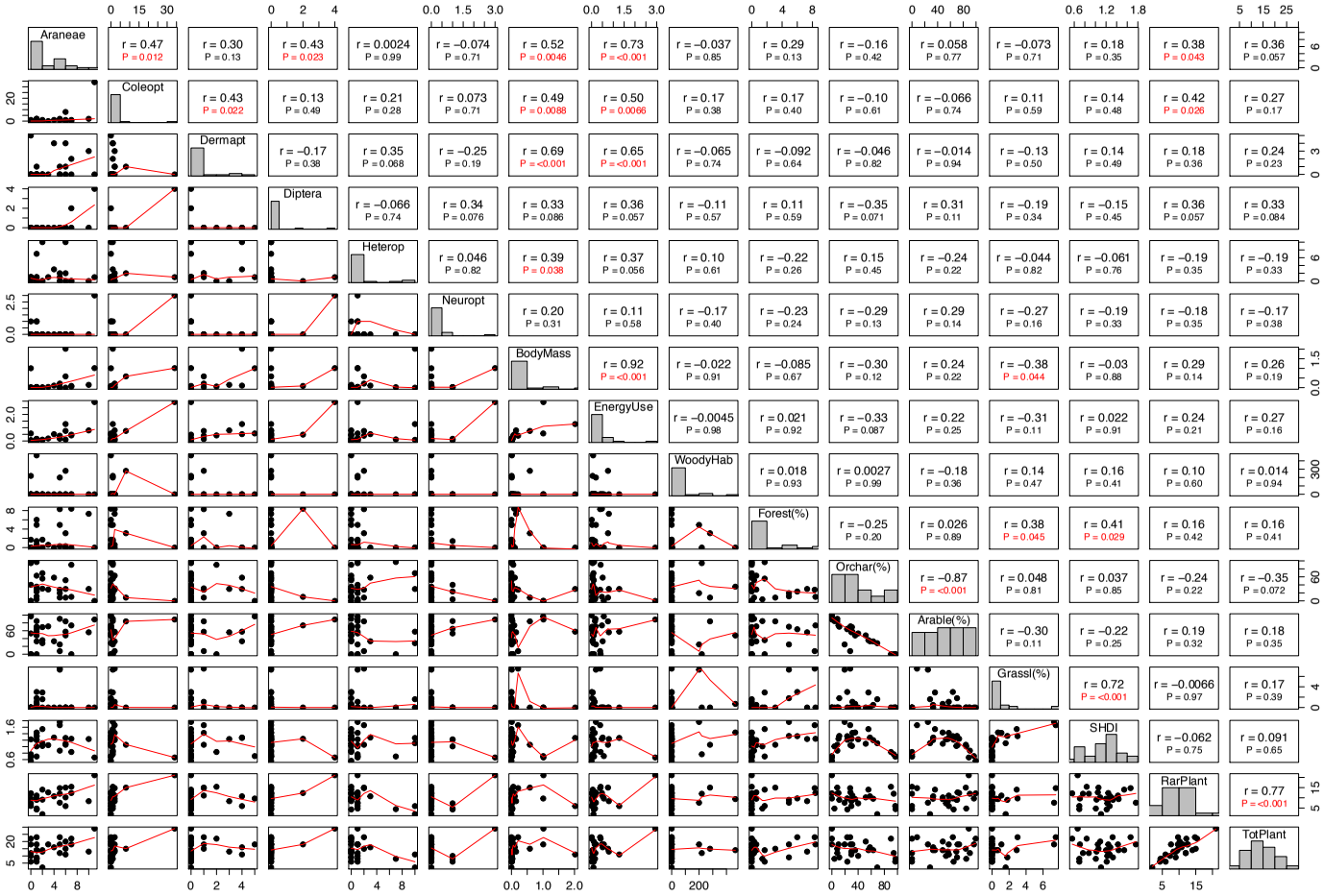

Figure A5. Correlation chart of variables included in the predator analysis for German orchards. See caption of Figure A4 for details.

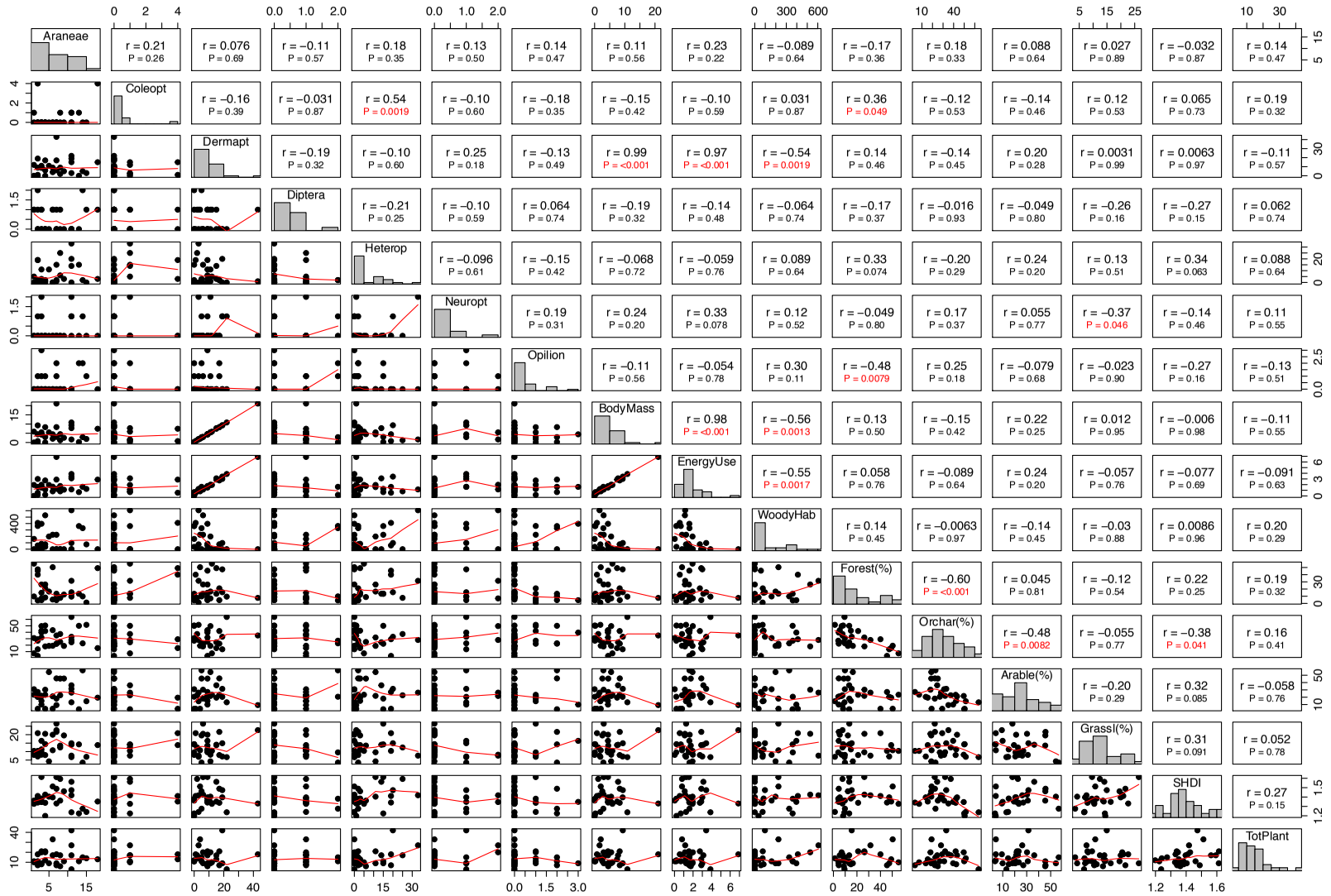

Figure A6. Correlation chart of variables included in the predator analysis for Swedish orchards. See caption of Figure A4 for details.