Supplementary Materials

Fig. S1. Layout of plant and insect analysis sites in the study area (source: Google Maps; accessed 9 September 2025).

Table S1. The results of the phytosociological research of plant communities.

Table number of relevé					1	2	3	4	5	6
Date	Geographical-historical group	L	T	f	22.06.2023					
Locality					Siechnice					
Distance from the light source [m]					150	150	500	500	900	900
Relevé area [m²]					20	20	15	15	6	5
Cover herb layer [%]					80-85	70	65	60-65	85	95
Number of species					33	20	25	27	27	15
ChCl., O., All. *Agropyretea intermedio-repentis*, *Agropyretalia intermedio-repentis*, *Convolvulo-Agropyrion repentis*										
Bromus inermis					.	.	·	·	+	.
Equisetum arvense					1	.	·	·	+	+
Poa compressa					2	2	·	2	.	2
ChAss. *Convolvulo arvensis-Agropyretum repentis*										
Convolvulus arvensis					.	.	1	2	+	2
Elymus repens					.	1	2	2	.	2
ChCl. *Artemisietea vulgaris*										
Cirsium arvense					+	+	+	·	1	.
Urtica dioica	Ap R>S	x	x	H	2	+	2	2	1	.
ChSCl. *Artemisienea vulgaris*										
Artemisia vulgaris	Ap R>S	7	6	H	2	1	.	1	2	2
Linaria vulgaris	Ap R>S	8	6	G	+	+	.	.	.	.
Silene latifolia	Ap R	8	6	T, H	.	.	1	.	.	.
ChO. *Onopordetalia acanthii*										
Anchusa officinalis	Ar	9	7	H	.	2	.	.	.	.
Cichorium intybus	Ar	9	6	H	1	.	.	+	.	.
Oenothera biennis	Kn?	9	7	H	.	.	1	.	.	.
ChAss. *Artemisio-Tanacetetum vulgaris*										
Tanacetum vulgare	Ap R	8	6	H	2	1	2	.	.	.
ChAss. *Berteroetum incanae*										
Berteroa incana	Ap R	9	6	H, T	1	+	+	.	.	.
ChSCl. *Galio-Urticenea*										
Galium aparine	Ap R=S	7	6	T, H	.	.	.	.	+	.
Rubus caesius c	Ap R	6	5	N	2	.	.	.	1	.
ChAss. *Anthriscetum sylvestris*										
Anthriscus sylvestris	Ap R	7	x	H	1	.	.	.	.	+
ChAss. *Rudbeckio-Solidaginetum*										
Solidago canadensis	Kn i	8	6	G, H	.	+	.	.	.	.
ChCl. *Molinio-Arrhenatheretea*										
Lathyrus pratensis	Ap R	7	5	H	1	.	.	.	.	.

Phleum pratense	Ap R	7	x	H	.	.	.	.	+	.
Plantago lanceolata	Ap R=S	6	x	H	.	+	.	.	.	.
Poa pratensis	Ap R>S	6	x	H	.	.	1	.	2	2
Poa trivialis	Ap R=S	6	x	H	1	.	.	.	.	.
ChO., All. *Plantaginetalia majoris*, *Polygonion avicularis*										
Plantago major	Ap R=S	8	x	H	.	.	.	+	1	.
Poa annua	Ap R=S	7	x	H, T	.	.	.	2	.	.
ChAss. *Lolio-Polygonetum arenastri*										
Lolium perenne	Ap R>S	8	6	H	.	.	1	2	3	3
Polygonum aviculare s.l.	Ap R=S	7	6	T	.	.	.	2	1	2
ChO., All. *Trifolio fragiferae-Agrostietalia stoloniferae*; *Agropyro-Rumicion crispi*										
Agrostis stolonifera	Nat	8	x	H	.	.	.	2	2	.
Carex hirta	Ap R	7	6	G	.	.	.	+	.	.
ChO. *Arrhenatheretalia*										
Achillea millefolium	Ap R>S	8	x	H	+	.	+	.	.	.
Bromus hordeaceus	Ap R	7	6	T	2	+	.	.	.	.
Dactylis glomerata	Ap R>S	7	x	H	1	+	+	.	1	1
Festuca rubra	Ap R	x	x	H	1	.	+	.	.	.
Taraxacum sect. *Taraxacum*	Ap R=S	7	x	H	.	.	.	.	+	.
ChAll. *Arrhenatherion elatioris*										
Galium mollugo	Ap R>S	7	6	H	1	.	1	.	.	+
Tragopogon pratensis	Ap R	7	6	H	r(+)	.	+	.	.	.
ChAss. *Arrhenatheretum elatioris*										
Arrhenatherum elatius	Ap R	8	5	H	2	3	2	1	.	1
Geranium pratense	Ap R	8	6	H	.	.	.	.	1	.
ChCl. *Stellarietea mediae*										
Anagallis arvensis	Ar	6	6	T	.	.	.	+	.	.
Fallopia convolvulus	Ar	7	6	T, H	.	.	.	+	.	.
Thlaspi arvense	Ar	6	5	T, H	.	.	.	+	.	.
Tripleurospermum inodorum	Ar	9	6	H, T	.	.	.	+	+	+
Vicia hirsuta	Ar	7	6	T	1	.	+	.	.	.
ChO. *Centauretalia cyani*										
Consolida regalis	Ar	6	7	T	.	.	.	+	.	.
Cyanus segetum	Ar	7	6	T	.	+	.	1	.	.
Papaver rhoeas	Ar	6	6	T	+	.	.	.	1	.
ChAll. *Aperion spicae-venti*										
Apera spica-venti	Ar	6	6	T, H	.	.	.	+	.	.
ChO. *Polygono-Chenopodietalia*										
Chenopodium album	Ap R=S	x	x	T	+	.	.	+	1	.
Echinochloa crus-galli	Ar i ch	6	7	T	.	.	.	.	+	.
Geranium pusillum	Ar	7	6	T	r	.	.	+	.	.
ChAll. *Polygono-Chenopodion*										
Veronica persica	Kn i ch	6	x	T	.	.	.	1	+	.

ChAss. *Erigeronto-Lactucetum*										
Lactuca serriola	Ar	9	7	H	.	.	.	+	1	1
ChAss. *Hordeo-Brometum*										
Bromus sterilis	Ar	7	6	T	2	2	3	2	1	.
ChAss. *Sisymbrietum loeselii*										
Sisymbrium loeselii	Kn	7	6	H, T	+	+	+	.	.	.
ChCl., O. *Epilobietea angustifoliae, Atropetalia*										
Calamagrostis epigejos	Ap R	7	5	G, H	.	+	.	.	.	.
ChAll. *Magnocaricion*										
Cicuta virosa	Nat	7	6	H	.	.	.	r	.	.
ChCl., O. *Rhamno-Prunetea*, *Prunetalia spinosae*										
Crataegus monogyna c	Nat	7	5	N	+	.	.	.	.	.
ChAll. *Berberidion*										
Rosa agrestis c	Nat	8	6	N	.	1	.	.	.	.
ChCl. *Festuco-Brometea*										
Euphorbia cyparissias	Ap R	8	x	G, H	.	+	.	.	.	.
ChAll. *Festuco-Stipion*										
Pilosella echioides	Nat	8	6	H	.	.	+	.	.	.
ChCl. *Querco-Fagetea*										
Fraxinus excelsior c	Nat	4	5	M	+	.	.	.	.	.
ChAll. *Vicio lathyroidis-Potentillion argenteae*										
Potentilla argentea	Ap R	9	6	H	.	.	2	.	.	.
Other species										
Barbarea vulgaris	Ap R	8	6	H	.	.	.	.	.	.
Capsella bursa-pastoris	Ar	7	x	H, T	.	.	.	+	+	.
Echium vulgare	Ap R	9	6	H	1	.	2	.	.	.
Erigeron annuus	Kn i	7	6	H, T	+	.	1	.	.	.
Medicago lupulina	Ap R=S	7	5	H, T	+	.	+	.	.	.
Papaver dubium	Ar	6	6	T	r	.	.	+	.	1
Pimpinella saxifraga	Ap R	7	x	H	.	.	+	.	1	.
Polygonum amphibium f. *terrestre*	Nat	8	6	Hy, G	.	.	.	.	+	.
Prunus cerasifera c	Kn?	-	-	N	1	.	.	.	.	.

Geographical-historical group:

Nat – native species

Ap – apophytes

R – apophytes appearing in ruderal communities

S – apophytes appearing in segetal communities

R=S – apophytes appearing with equal frequency in ruderal and in segetal communities

R>S – apophytes appearing more frequently in ruderal than in segetal communities

R<S – apophytes appearing more frequently in segetal than in ruderal communities

Ar – archeophytes
Ar (VU) – archeophytes, vulnerable
Ar i ch – archeophytes, invasive weed
Kn – kenophytes
Kn i – kenophytes, invasive
Kn i ch – kenophytes, invasive weed
Kn? – kenophytes, dubious status, requires further research
U, Ef – cultivated species, ephemerophyte

Ecological indicator values:

L – light value
1 deep shade plant
2 between 1 and 3
3 shade plant
4 between 3 and 5
5 half-shade plant
6 between 5 and 7
7 moderate light
8 light plant
9 full light plant
x indifferent

T – temperature value
1 cold indicator
2 between 1 and 3
3 cool indicator
4 between 3 and 5
5 moderately warm indicator
6 between 5 and 7
7 warm indicator
8 between 7 and 9
9 extremely warm indicator
x indifferent

f – type of growth
M – megaphanerophyte
N – nanophanerophyte
C – herbaceous chamaephyte
H – hemicrypotophyte
G – geophyte
T – therophyte
Hy – hydrophyte
li – liana

Braun-Blanquet scale:

r – rare species (1-2 individuals)

+ – only a few individuals (2-10)

1 – covering less than 5% of the relevé area

2 – cover 5-25% of the relevé area

3 – cover 26-50% of the relevé area

4 – cover 51-75% of the relevé area

5 – cover 76-100% of the relevé area

Table S2. Summary table of PCA analysis of the plant community.

Statistic	Axis 1	Axis 2	Axis 3	Axis 4
Eigenvalues	0.58	0.15	0.11	0.09
Explained variation (cumulative)	57.58	72.32	83.76	93.07
Pseudo-canonical correlation (suppl.)	0.89	0.18	0.044	0.051

Table S3. Results of comparing plant population traits from three distances from the light source using the Kruskal-Wallis test.

	Chi-Square	DF	Prob>Chi-Square
Shannon-Wiener	582.14	2	0.097
Species number	544.36	2	0.15
Temperature index	210.47	2	0.51
Light index	630.25	2	0.090

Table S4. The results of the general linear model (GLM) of the effects of distance from the light source (150, 500, 900 m) and term (1 and 2) (explanatory variables) on the epigeic fauna abundance and diversity.

Group	Effect	Df	Sum of squares	Mean sum of squares	F value	Pr. > F	Sum of individuals
Acari	Distance	2	126.97	63.49	2.55	0.12	37
	Term	1	81.58	81.58	3.27	0.09	
Collembola	Distance	2	14918.78	7459.39	1.27	0.31	793
	Term	1	17986.72	17986.72	3.07	0.10	
Carabidae	Distance	2	65083.00	32541.50	1.58	0.24	1383

	Term	1	48984.50	48984.50	2.37	0.15	
Formicidae	Distance	2	32.44	16.22	2.19	0.15	32
	Term	1	56.89	56.89	7.67	0.015	
Aranae	Distance	2	52.11	26.06	3.16	0.07	44
	Term	1	26.89	26.89	3.26	0.49	
Coccinellidae	Distance	2	13.44	6.72	0.74	0.50	25
	Term	1	29.39	29.39	3.23	0.094	
Staphylinidae	Distance	2	49.33	24.67	1.75	0.21	48
	Term	1	117.56	117.56	8.35	0.012	
Margalef index	Distance	2	1.688	0.84	6.40	0.01	-
	Term	1	0.021	0.02	0.16	0.70	