

Kuzemko et al.: Dry grasslands of Central Podolia

**Table 4.** Abridged synoptic table of the dry grassland communities in the study region in Central Podolia (Ukraine)

Species are arranged according to decreasing phi-values in the respective species blocks (only those species that were significant according to Fisher's exact test are included) and according to decreasing overall constancy for the non-diagnostic species. Diagnostic species of associations with 10% constancy or less in that association as well as companion taxa with 10% or less overall constancy are not shown. Percentage constancies are given, with the superscript symbols represent the phi values (\*\* > 0.50; \* > 0.25; ° > 0.00), and means of the header data, based on association means. Diagnostic species are highlighted in dark grey, while transgressive diagnostic species and differential species are highlighted in light grey and additionally marked in the column left of the species names. The symbols in the first column indicate whether a diagnostic species in the context of the present study, from a larger scale perspective likely is indeed a character species of that unit (CC), of a superior unit (C) or only a differential species (D). In the column immediately left of the species names, the life forms are indicated: A = "alga"; B = bryophyte; G = graminoid; H = other herb (i.e. forb); L = lichen; W = woody plant.

**Tabelle 4.** Gekürzte Stetigkeitstabelle der analysierten Trockenrasengesellschaften Zentral-Podoliens (Ukraine)

Die Arten sind nach fallenden phi-Werten im jeweiligen Block angeordnet (wobei nur Arten mit statistisch signifikanter Häufung gemäß Fishers exaktem Test gelistet sind) bzw. nach fallender Gesamtstetigkeit im Fall der nicht diagnostischen Arten (Begleiter). Diagnostische Arten von Assoziationen mit einer Stetigkeit von ≤ 10 % sowie Begleiter mit einer Gesamtstetigkeit von ≤ 10 % sind nicht dargestellt. Die Zahlen im Artenteil der Tabelle stellen prozentuale Stetigkeitswerte dar, wobei die hochgestellten Symbole die phi-Werte repräsentieren (\*\* > 0.50; \* > 0.25; ° > 0.00), während die Zahlen im Kopfteil der Tabelle Mittelwerte basierend auf den Assoziationsmittelwerte sind. Diagnostische Arten sind in dunkelgrau hervorgehoben, transgressive diagnostische Arten und Differenzialarten dagegen in hellgrau, mit zusätzlicher Kennzeichnung in der Spalte links vom Artnamen. Die Symbole in der Spalte ganz links zeigen, ob eine Art aus überregionaler Perspektive vermutlich Charakterart der betreffenden Einheit (CC), Charakterart einer übergeordneten Einheit (C) oder nur eine Differenzialart (D) ist. In der Spalte unmittelbar links vom Artnamen ist die Lebensform angegeben: A = "Alge"; B = Moos; G = Graminoide; H = andere Krautige; L = Flechte; W = Gehölz.

Syntaxon	All	Cl.1	Cl.2	O.1.1	O.1.2	O.1.3	O.2.1	O.2.2	1.1.1	1.2.1	1.3.1	2.1.1	2.1.2	2.1.3	2.2.1	2.2.2	2.2.3	
Number of associations	3	6	1	1	1	1	3	3	1	1	1	1	1	1	1	1	1	
Number of relevés	17	209	5	10	2	45	164	5	10	2	11	15	19	59	38	67		
Inclination [°]	19	19	22	27	7	18	19	22	27	7	14	24	16	22	18	18		
Heat index	0.02	-0.10	-0.04	0.05	-0.24	-0.12	-0.16	0.07	0.05	-0.24	-0.12	-0.08	-0.21	-0.19	0.16	0.00	0.06	
Microrelief [cm]	7	17	6	29	17	4	5	7	29	17	4	6	4	4	6	8	6	
Total vegetation cover [%]	83	79	86	59	82	95	91	80	59	82	95	92	92	88	82	76	83	
Cover shrub layer [%]	1	1	0	1	1	1	0	1	1	1	1	0	0	1	1	0	1	
Cover herb layer [%]	77	59	80	35	60	83	84	77	35	60	83	84	85	83	80	71	79	
Cover moss layer [%]	14	42	12	41	38	10	15	9	41	38	46	4	7	34	8	13	8	
Cover litter [%]	12	11	11	4	7	23	10	13	4	7	23	8	13	9	13	15	10	
Cover stones and rocks [%]	4	16	2	37	11	0	1	4	37	11	0	1	0	1	1	7	4	
Cover gravel [%]	3	1	3	1	2	0	1	4	1	2	0	1	0	2	5	4	4	
Cover fine earth [%]	7	3	7	2	6	3	5	8	2	6	3	4	6	7	8	7	7	
Species richness (total)	41.0	46.0	40.6	44.8	47.2	46.0	40.7	40.4	44.8	47.2	46.0	40.9	34.9	46.3	34.7	42.1	44.8	
Species richness (vascular plants)	37.1	37.3	37.2	36.2	32.2	43.5	37.3	37.0	36.2	32.2	43.5	38.1	31.1	42.8	32.1	37.3	41.8	
Species richness (bryophytes)	3.2	6.1	3.0	6.2	9.6	2.5	3.2	2.8	6.2	9.6	2.5	2.5	3.7	3.3	2.4	3.5	2.4	
Species richness (lichens)	0.6	2.5	0.3	2.2	5.3	0.0	0.1	0.5	2.2	5.3	0.0	0.1	0.1	0.1	0.2	0.9	0.4	
<b>Class 1: Koelerio-Coryneporetea</b>																		
C	B	Brachythecium albicans	7.1	63**	4	90**	100**	7	0	90**	100**		7	16			1	
C	H	Sedum acre	11.1	63**	4	100**	90**		9	100**	90**					24	3	
D	H	Artemisia absinthium	9.7	67**	8	60*	40°	100**	11	4	60*	40°	100**		13	21	7	3
C	G	Poa bulbosa	5.3	47**	1	80**	60*		2		80**	60*					5	
C	H	Acinos arvensis	25.2	80**	20	100*	40	100*	13	28	100*	40	100*	27		11	20	47°
D	H	Berteroa incana	8.4	53**	7	40°	70*	50°	13	2	40°	70*	50°	9	20	11	3	
C	B	Bryum caespitium	12.4	57*	11	80*	40°	50°	13	9	80*	40°	50°	27°	7	5	5	11
D	H	Lactuca serriola	5.3	40*	3	60*	10	50*	2	4	60*	10	50*		7		7	3
C	B	Syntrichia ruralis agg.	16.8	53*	10	80*	80*		20		80*	80*					3	45°
C	H	Hylotelephium maximum	5.3	37*	3	40*	70**		4	1	40*	70**			13			3
C	H	Arenaria serpyllifolia	36.3	80*	32	80°	60°	100*	27	37	80°	60°	100*	45	13	21	31	47
C	H	Potentilla argentea agg.	14.2	63*	20		90*	100*	36°	3		90*	100*	18	53°	37°	3	5
C	H	Trifolium arvense	11.9	60*	17		80*	100**	34°	1		80*	100**	27	33°	42°	2	
D	B	Grimmia pulvinata	6.2	27*	3	40*	40*		6		40*	40*						13°
<b>Order 1.1: Alyso alyssoidis-Sedetalia &amp; Assoc. 1.1.1: Ajuga chamaepitys subsp. chia-Sedum acre comm.</b>																		
D	Cl.	H	Ballota nigra subsp. nigra	2.2	23*	1	60**	10°		2		60**	10°		7			
D	H	Lappula squarrosa	4.9	20*	3	60**			2	5	60**			7		3	8	
CC	H	Aurinia saxatilis subsp. saxatilis	0.9	13*		40**					40**							
D	G	Bromus tectorum	0.9	13*		40**					40**							
D	L	Xanthoria sp.	0.9	13*		40**					40**							
D	H	Polycnemum arvense	7.1	20°	6	60**			2	9	60**			7		5	18°	
D	B	Schistidium apocarpum agg.	7.1	23*	4	60**	10		9		60**	10				3	18°	
D	B	Bryum argenteum	5.3	23*	5	60**	10		5	4	60**	10		9	7		5	
CC	H	Ajuga chamaepitys subsp. chia	12.4	20°	8	60**			2	14°	60**			5		15°	13°	
D	G	Poa compressa	18.6	33°	16	80**	20		14	18	80**	20		9		32°	19	
C	B	Mannia fragrans	0.4	7°		20*					20*							
C	H	Potentilla cf. inclinata	0.4	7°		20*					20*							
D	G	Silene latifolia subsp. alba	0.4	7°		20*					20*							
D	G	Verbascum densiflorum	0.4	7°		20*					20*							
D	H	Veronica cf. persica	0.4	7°		20*					20*							
C	H	Centaurea diffusa	18.1	20°	15	60*			5	25°	60*			9		5	15	
D	W	Prunus armeniaca	0.9	7°	0	20*				1	20*						2	
D	H	Asplenium ruta-muraria subsp. ruta-muraria	0.9	7°	0	20*				1	20*							
C	L	Toninia sedifolia	0.9	7°	0	20*				1	20*							
D	H	Polygonum aviculare agg.	0.9	7°	1	20*			2		20*			7°				
D	Cl.	G	Eragrostis minor	0.9	10*		20*	10°			20*	10°						
D	Cl.	H	Geranium pusillum	0.9	10*		20*	10°			20*	10°						
<b>Order 1.2: Sedo-Scleranthetalia &amp; Assoc. 1.2.1: Allium podolicum-Sedum acre comm.</b>																		
C	L	Cladonia furcata	3.1	23*		70**					70**							
CC	H	Hieracium echinoides	11.9	30*	8	90**			8	8	90**			13	11	7	5	
C	H	Sedum sexangulare	2.2	17*		50**					50**							
CC	H	Viola tricolor subsp. matutina	2.2	17*		50**					50**							
C	L	Cladonia fimbriata	1.8	13*		40**					40**							
C	L	Cladonia furcata	1.8	13*		40**					40**							
C	Cl.	L	Cladonia pyxidata agg.	4.9	27*	2	20°	60**	2	2	20°	60**			5		3	
CC	H	Allium podolicum	3.5	17°	4	50**			7		50**			9°	13°			
C	Cl.	B	Ceratodon purpureus	14.6	40**	9	40°	80**	5	14	40°	80**			9		5	
CC	H	Veronica spicata subsp. incana	6.6	17°	4	50**			4	4	50**			7	5		3	
D	H	Asplenium trichomanes	1.3	10*		30**					30**							
D	L	Cladonia coniocraea	1.3	10*		30**					30**							
C	L	Cladonia glauca	1.3	10*		30**					30**							
C	L	Peltigera rufescens	1.3	10*		30**					30**							
D	B	Pleuroidium acuminatum	1.3	10*		30**					30**							
C	B	Polytrichum juniperinum	1.3	10*		30**					30**							
C	B	Polytrichum piliferum	1.3	10*		30**					30**							
C	H	Rumex acetosella	1.3	10*		30**					30**							
D	Cl.#	B	Hypnum cupressiforme var. lacunosum	3.5	23*	1	20°	50**	2	1	20°	50**			5		2	
D	H	Centaurea rhenana	15.9	23°	13	70**			13	12	70**			7	32°	19°	5	
C	H	Veronica verna	1.8	10°	1	30*			2		30*				5°			
D	H	Rumex thyrsoiflorus subsp. thyrsoiflorus	1.8	10°	1	30*			2		30*			7°				
D	Cl.	B	Bryum capillare agg.	15.0	37*	14	40°	70*	14	13	40°	70*		18	20	5	15	
C	H	Asplenium septentrionale	0.9	7°		20*					20*							
C	B	Cephalozia hampeana	0.9	7°		20*					20*							
C	L	Cladonia ochrochlora	0.9	7°		20*					20*							
C	L	Cladonia rei	0.9	7°		20*					20*							
D	H	Cystopteris fragilis	0.9	7°		20*					20*							

Syntaxon			All	Cl.1	Cl.2	O.1.1	O.1.2	O.1.3	O.2.1	O.2.2	1.1.1	1.2.1	1.3.1	2.1.1	2.1.2	2.1.3	2.2.1	2.2.2	2.2.3	
Number of associations			3	6	1	1	1		3	3	1	1	1	1	1	1	1	1	1	1
Number of relevés			17	209	5	10	2		45	164	5	10	2	11	15	19	59	38	67	
<b>Cl. 2: Festuco-Brometea</b>																				
C	H	Teucrium chamaedrys	75.7	13	72**	20	20	.	57°	86*	20	20	.	45	53°	74°	78°	89*	91*	
C	H	Chamaecytisus austriacus	33.2	.	33*	.	.	.	32°	33°	.	.	.	73*	13	11	27°	5	67*	
C	H	Scabiosa ochroleuca	38.9	7	39*	20	.	.	35°	42°	20	.	.	45°	7	53°	36°	39°	52°	
C	H	Jurinea ledebourii	29.2	.	26*	.	.	.	20°	31*	.	.	.	45*	.	16	20°	11	63*	
C	H	Pimpinella saxifraga subsp. nigra	20.8	.	25*	.	.	.	33*	18°	.	.	.	18°	33°	47*	17°	11	25°	
C	H	Thalictrum minus	23.5	.	23*	.	.	.	23°	24°	.	.	.	45*	13	11	25°	5	40°	
C	H	Galium ser. Octonaria	23.5	.	21*	.	.	.	14°	27*	.	.	.	27°	.	16°	27°	18°	36°	
C	H	Medicago sativa subsp. falcata	61.1	37	65*	60°	50	.	74*	56°	.	60°	50	55	93*	74°	51	42	76°	
D	H	Vincetoxicum hirundinaria	18.6	.	18*	.	.	.	13°	23°	.	.	.	27°	7	5	17°	26°	25°	
<b>Order 2.1: Brachypodietalia pinnati</b>																				
C	Cl.	H Plantago media subsp. media	36.3	.	49*	.	.	.	71**	27	.	.	.	91*	33°	89*	20	11	51°	
C	H	Ranunculus polyanthemos subsp. polyanthemos	19.0	.	27*	.	.	.	41*	13	.	.	.	18°	47*	58*	17	5	16	
D	G	Poa angustifolia	31.9	40	46°	40	30	50°	72*	20	40	30	50°	55°	87*	74°	31	13	15	
C	H	Seseli annuum subsp. annuum	10.6	.	20*	.	.	.	34*	7	.	.	.	55*	47*	.	8	5	6	
C	Cl.	H Agrimonia eupatoria subsp. grandis	43.4	23	51*	20	.	50°	61*	41	20	.	50°	64°	47°	74°	49°	39	36	
C	G	Koeleria macrantha	30.1	23	41°	20	50°	.	62*	19	20	50°	.	55°	73*	58°	20	11	27	
C	H	Campanula glomerata	8.8	.	13°	.	.	.	21*	5	.	.	.	18°	20°	26°	2	3	12°	
C	H	Galium verum subsp. verum	38.9	23	50*	.	70°	.	70*	30	.	70°	.	91*	87*	32	32	18	39	
C	H	Dianthus membranaceus	12.8	10	21°	.	30°	.	35*	6	.	30°	.	36°	53*	16	12	.	6	
C	G	Festuca rupicola subsp. rupicola	25.7	23	38°	20	50°	.	61*	15	20	50°	.	55°	87*	42°	17	11	16	
<b>Assoc. 2.1.1: Linum hirsutum-Galium verum comm.</b>																				
D	H	Origanum vulgare	4.9	.	13°	.	.	.	24*	2	.	.	.	73**	.	.	2	.	3	
C	Ord.	H Centaurea scabiosa	13.3	.	25*	.	.	.	41*	9	.	.	.	82**	27°	16	14	8	4	
C	H	Veronica austriaca subsp. austriaca	12.4	10	19°	20°	10	.	26°	11	20°	10	.	73**	13	.	10	16	7	
CC	H	Linum hirsutum subsp. hirsutum	15.5	.	17*	.	.	.	18°	16°	.	.	.	55*	.	.	14°	5	28°	
CC	Ord.	H Carlina vulgaris subsp. intermedia	11.9	.	17*	.	.	.	25*	9	.	.	.	55*	.	21°	7	3	18°	
D	W	Prunus fruticosa	3.1	3	7°	.	10°	.	12°	1	.	10°	.	36*	.	.	3	.	.	
C	Ord.	H Senecio jacobaea	16.4	17	25°	.	50°	.	39*	12	.	.	50°	73*	7	37°	12	8	15	
C	H	Stachys officinalis	3.5	.	6°	.	.	.	9°	3	.	.	.	27*	.	.	2	3	4°	
C	B	Microbryum davallianum	1.8	.	4°	.	.	.	6°	1	.	.	.	18*	.	.	2	.	1	
D	H	Hieracium umbellatum	1.8	.	4°	.	.	.	6°	1	.	.	.	18*	.	.	3°	.	.	
D	H	Odontites verna subsp. serotina	5.8	.	8°	.	.	.	11°	5	.	.	.	27*	.	5	3	5	7°	
C	H	Cuscuta epithymum subsp. epithymum	7.1	.	8°	.	.	.	9°	7°	.	.	.	27*	.	.	3	5	13°	
C	H	Viola hirta	1.3	.	4°	.	.	.	8°	.	.	.	.	18*	7°	.	.	.	.	
C	G	Brachypodium pinnatum subsp. pinnatum	3.1	.	4°	.	.	.	6°	3	.	.	.	18*	.	.	3°	.	4°	
CC	H	Phlomis tuberosa	3.5	3	7°	.	10°	.	14°	1	.	10°	.	27*	13°	.	.	3	1	
C	H	Stachys recta subsp. recta	33.2	27	36°	40°	40°	.	37°	35°	40°	40°	.	73*	27	11	17	50°	39°	
CC	H	Silene donetziaca	19.0	7	20°	20°	.	.	19°	22°	20°	.	.	45*	.	11	19°	26°	21°	
<b>Assoc. 2.1.2: Fissidens viridulus-Festuca rupicola comm.</b>																				
C	B	Fissidens viridulus	2.2	.	6°	.	.	.	11*	.	.	.	.	.	33**	.	.	.	.	
C	H	Trifolium montanum	4.4	7	8°	.	20°	.	16°	0	.	20°	.	.	47**	.	.	.	1	
D	Ord.	H Falcaria vulgaris	8.0	.	12°	.	.	.	19*	5	.	.	.	9°	47**	.	10°	.	6	
C	Ord.	H Campanula bononiensis	5.8	3	14°	.	10	.	27*	0	.	10	.	27°	53**	.	.	.	1	
D	B	Barbula convoluta	1.3	.	3°	.	.	.	7°	.	.	.	.	.	20*	.	.	.	.	
C	B	Plagiomnium rostratum	1.3	.	3°	.	.	.	7°	.	.	.	.	.	20*	.	.	.	.	
C	H	Veronica spicata subsp. spicata	3.1	.	4°	.	.	.	7°	2	.	.	.	.	20*	.	.	.	6°	
D	G	Arrhenatherum elatius subsp. elatius	0.9	.	2°	.	.	.	4°	.	.	.	.	.	13*	.	.	.	.	
C	Cl.	H Eryngium campestre	46.9	20	50*	60°	.	.	60*	41°	.	60°	.	18	87*	74°	58°	24	42°	
D	B	Pleuridium subulatum	1.8	3	3	.	10°	.	7°	.	.	10°	.	.	20*	.	.	.	.	
D	H	Carex praecox	4.4	7°	6	.	20°	.	9°	2	.	20°	.	.	27*	.	7°	.	.	
D	H	Veronica chamaedrys	5.3	3	8°	.	10°	.	14°	2	.	10°	.	.	27*	16°	2	3	3	
D	B	Physcomitrium pyriforme	2.2	3	5°	.	10°	.	10°	.	.	10°	.	9°	20*	.	.	.	.	
C	H	Filipendula vulgaris	9.3	7	12°	.	20°	.	17°	7	.	20°	.	18°	33*	.	5	8	9	
D	H	Knautia arvensis	2.7	3	5°	.	10°	.	10°	1	.	10°	.	9°	20*	.	2	.	.	
D	B	Barbula unguiculata	2.7	.	4°	.	.	.	4°	3°	.	.	.	.	13*	.	5°	3°	.	
D	G	Bromus inermis	17.3	3	21°	.	10	.	26°	15°	.	10	.	27°	40*	11	24°	5	16°	
<b>Assoc. 2.1.3: Homalothecium lutescens-Poa angustifolia comm.</b>																				
D	G	Agrostis gigantea subsp. gigantea	4.0	.	7°	.	.	.	14*	1	.	.	.	.	.	42**	2	.	.	
D	Ord.	H Trifolium pratense	10.2	3	18°	.	10	.	33*	3	.	10	.	9	20°	68**	7	3	.	
D	G	Lolium perenne	3.5	.	6°	.	.	.	12*	1	.	.	.	.	37**	.	2	.	.	
D	Ord.	H Centaurea jacea agg.	12.4	.	18*	.	.	.	29*	7	.	.	.	18°	7	63**	10	3	9	
C	Ord.	H Polygala comosa	4.4	.	8°	.	.	.	15*	1	.	.	.	9°	.	37*	2	.	1	
D	H	Daucus carota subsp. carota	17.3	23°	22	20	50°	.	34°	10	20	.	50°	9	13	79*	15	3	13	
C	Ord.	H Leontodon hispidus subsp. hispidus	16.4	.	21*	.	.	.	30*	12	.	.	.	18°	13	58*	10	8	19°	
D	G	Festuca rubra	1.8	.	4°	.	.	.	7°	.	.	.	.	.	21*	.	.	.	.	
C	H	Senecio erucifolius	2.7	.	3°	.	.	.	5°	1	.	.	.	.	16*	.	.	.	4°	
D	H	Myosotis arvensis subsp. arvensis	0.9	.	2°	.	.	.	4°	.	.	.	.	.	11*	.	.	.	.	
C	H	Prunella grandiflora subsp. grandiflora	0.9	.	2°	.	.	.	4°	.	.	.	.	.	11*	.	.	.	.	
D	W	Crataegus monogyna	8.8	.	9°	.	.	.	9°	9°	.	.	.	.	26*	.	7°	11°	10°	
C	H	Thymelaea passerina	3.1	.	4°	.	.	.	5°	3°	.	.	.	.	16*	.	2	5°	1	
D	H	Veronica prostrata subsp. prostrata	7.5	7	11°	.	20°	.	17°	4	.	20°	.	.	20°	32*	5	5	1	
D	H	Cichorium intybus	7.1	.	7°	.	.	.	7°	7°	.	.	.	.	21*	.	12°	5°	4	
D	H	Inula britannica	4.9	.	8°	.	.	.	12°	3	.	.	.	9°	7°	21*	3	3	3	
<b>Order 2.2: Festucetalia valesiacae</b>																				
C	H	Teucrium montanum	55.3	13	39*	40°	.	.	4	74**	40°	.	.	.	.	11	51°	84*	88*	
C	Cl.	H Coronilla varia	62.4	.	56**	.	.	.	36	75**	.	.	.	55°	7	47°	75*	71°	81*	
C	Cl.	H Viola ambigua	56.2	7	47*	20	.	.	24	70**	20	.	.	36°	.	37°	64°	71*	75*	
C	G	Dichanthium ischaemum	73.9	37	58°	80°	30	.	25	91**	80°	30	.	27	.	47	88*	95*	90*	
C	G	Cleistogenes serotina subsp. bulgarica	45.6	20	32°	60*	.	.	4	61**	60*	.	.	.	11	.	41°	71*	70*	
C	G	Stipa capillata	38.5	7	30*	20	.	.	7	53**	20	.	.	9	.	11	34°	68*	55*	
C	Cl.	H Salvia verticillata	61.5	20	54°	60°	.	.	32	76*	60°	.	.	64°	7	26	64°	84*	79*	
C	H	Euphorbia nicaeensis subsp. stepposa	52.2	20	42°	60°	.	.	16	68*	60°	.	.	9	7	32	49°	89*	66°	
C	Cl.	H Astragalus austriacus	36.7	.	28*	.	.	.	11	45*	.									