



On-line Suppl. Fig 1. The study area on the Lublin Upland (Poland) and the location of study plots in the dry grassland (DG) and the railway embankment (RE). Dotted lines show railway tracks layout.

On-line Suppl. Tab. 1. Species noted on dry grassland (DG) and railway embankments (RE).

Species	Type of forage	Type of habitat																			
		Railway embankment										Dry grassland									
		Transects number										Transects number									
		2013					2014					2013					2014				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Number of forage species																					
17 10 21 15 23					18 30 20 29 16					40 41 48 42 33					41 35 42 39 36						
<i>Agrostis capillaris</i>	NF				+	+															
<i>Alopecurus pratensis</i>	NF		+	+	+		+	+													+
<i>Amaranthus retroflexus</i>	NF	+																			
<i>Anthoxanthum odoratum</i>	NF													+						+	
<i>Apera spica-venti</i>	NF				+		+						+							+	
<i>Arrhenatherum elatius</i>	NF	1		1							1	+	+		+			+	+		+
<i>Artemisia campestris</i>	NF					+	+				+	+	+	+				+	+	+	
<i>Artemisia vulgaris</i>	NF	1	+	+							1										
<i>Brachypodium pinnatum</i>	NF											2	2	1	2	2	2	2	1	2	2
<i>Bromus hordeaceus</i>	NF						+	+	+												
<i>Bromus inermis</i>	NF	1						1					+						+		
<i>Bromus tectorum</i>	NF			+																	
<i>Carex caryophylla</i>	NF												+						+		
<i>Carex hirta</i>	NF		+	+	+	+	+	+				+									+
<i>Carex praecox</i>	NF											+	+	+				+	+	+	
<i>Chenopodium album</i>	NF			+							+										
<i>Dactylis glomerata</i>	NF	+	+	+	+	+	+	+		+		+								+	
<i>Elymus repens</i>	NF	+	+	1		+		1	+		+	+							+		
<i>Festuca pratensis</i>	NF	+			+						+					+					+
<i>Festuca rubra</i>	NF			+	+	+	+	+			+	+	+						+	+	
<i>Festuca trachyphylla</i>	NF			+	+	+					+										+
<i>Holcus lanatus</i>	NF														+						+
<i>Lolium perenne</i>	NF	+		+			+		+		+	+							+		
<i>Phleum phleoides</i>	NF														+	+				+	+
<i>Phleum pratense</i>	NF		+		+		+					+	+						+	+	
<i>Elymus hispidus</i>	NF											+							+		
<i>Poa angustifolia</i>	NF							+			+										
<i>Poa compressa</i>	NF	+		+	+		+	+			+										
<i>Poa pratensis</i>	NF	+	+	+	+	+															
<i>Populus tremula</i>	NF															+					+

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		2013					2014					2013					2014				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Number of forage species																					
17	10	21	15	23	18	30	20	29	16	40	41	48	42	33	41	35	42	39	36		
<i>Rumex acetosa</i>	NF		+	+	+	+	+														
<i>Rumex acetosella</i>	NF										+		+		+		+		+		
<i>Setaria pumila</i>	NF						+	+	+	+	+				+						
<i>Setaria viridis</i>	NF	+	+	+							+								+		
<i>Betonica officinalis</i>	NP	1		+			+		+	+	+		+	1				1	+		
<i>Origanum vulgare</i>	NP	+	1	1	2	+	1	+	1	1	1	+	1	+	+	+	1	+	+	1	
<i>Salvia pratensis</i>	NP	+	+	1	+		+	1		+		+	1	1	+	1	+	1	+	+	
<i>Salvia verticillata</i>	NP	1		+		1		+	1	1		1		1	+	+	1	+	1	1	
<i>Thymus serpyllum</i>	NP		+	1				1	+		+	+	1	+	+	1	+	+	1	+	+
<i>Achillea millefolium</i>	NP				+		+	+	+		+			+		+			+	+	
<i>Achillea pannonica</i>	NP								+		+		+	+				+			
<i>Acinos arvensis</i>	NP										+		+			+		+			
<i>Adonis aestivalis</i>	NP		+																+		
<i>Agrimonia eupatoria</i>	NP			+					+	+	+					+		+			
<i>Allium oleraceum</i>	NP												+	+							
<i>Anchusa arvensis</i>	NP											+									
<i>Anchusa officinalis</i>	NP								+			+	+					+			
<i>Anthemis tinctoria</i>	NP							+			+					+					
<i>Anthriscus sylvestris</i>	NP									1											
<i>Anthyllis vulneraria</i>	NP										+		+			+		+			
<i>Arabis glabra</i>	NP		+										+								
<i>Arenaria serpyllifolia</i>	NP		+		+								+					+			
<i>Asparagus officinalis</i>	NP											+	+								
<i>Aster amellus</i>	NP										+	1	1			1	1	1			
<i>Astragalus cicer</i>	NP												+	+				+			
<i>Astragalus glycyphyllos</i>	NP				+																
<i>Veronica verna</i>	NP	+																			
<i>Berberis vulgaris</i>	NP													+					+		
<i>Berteroa incana</i>	NP				+			+			+		+			+					
<i>Brassica napus</i>	NP									+											
<i>Bunias orientalis</i>	NP									1											
<i>Campanula glomerata</i>	NP											+	+					+		+	
<i>Campanula patula</i>	NP					+			+												
<i>Campanula rapunculoides</i>	NP	+				+								+						+	
<i>Campanula sibirica</i>	NP											+	+				+	+	+	+	
<i>Capsella bursa-pastoris</i>	NP					+		+			+										
<i>Carlina vulgaris</i>	NP													+						+	
<i>Centaurea cyanus</i>	NP							+													
<i>Centaurea jacea</i>	NP	+							+	+			+			+	+				
<i>Centaurea pannonica</i>	NP											+					+				
<i>Centaurea scabiosa</i>	NP							+	+	+		+	+			+	+	+			
<i>Centaurea stoebe</i>	NP			+					+												
<i>Cerasium arvense</i>	NP				+																
<i>Cerastium holosteoides</i>	NP								+			+	+			+					
<i>Cerinthe minor</i>	NP											+					+			+	
<i>Chamaecytisus ratisbonensis</i>	NP								+												
<i>Chamomilla suaveolens</i>	NP	+		+																	
<i>Cichorium intybus</i>	NP							+													
<i>Cirsium arvense</i>	NP					+															
<i>Clinopodium vulgare</i>	NP										+	+	+			+	+	+			
<i>Convolvulus arvensis</i>	NP			+	+			+	+	+						+	+				
<i>Conyza canadensis</i>	NP	+	+	+			+	+	+												

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Number of forage species																					
17	10	21	15	23	18	30	20	29	16	40	41	48	42	33	41	35	42	39	36		
<i>Sanguisorba minor</i>	NP									+											
<i>Scabiosa ochroleuca</i>	NP									+	+	+		+	+	+					
<i>Sedum acre</i>	NP	+			+																
<i>Sedum maximum</i>	NP	+																			
<i>Senecio jacobaea</i>	NP				+	+															
<i>Silene vulgaris</i>	NP				+					+	+						+	+			
<i>Sisymbrium loeselii</i>	NP		+			1														+	
<i>Sisymbrium officinale</i>	NP				r																
<i>Sonchus arvensis</i>	NP					+				+											
<i>Sorbus aucuparia</i>	NP	+																			
<i>Stachys recta</i>	NP												+					+	+		
<i>Stellaria media</i>	NP				+		+														
<i>Tanacetum vulgare</i>	NP					+		+		+						+					
<i>Taraxacum officinale</i>	NP		+		+		+		+	+			+	+	+						
<i>Teucrium chamaedrys</i>	NP										+	+	+			+	+	+	+		
<i>Thalictrum minus</i>	NP									+					+						
<i>Thlaspi arvense</i>	NP						+	+													
<i>Thymus pulegioides</i>	NP	+																			
<i>Torilis japonica</i>	NP							+	+												
<i>Tragopogon orientalis</i>	NP							+													
<i>Trifolium arvense</i>	NP				+		+		1	+	+			+	+			+	+		
<i>Trifolium medium</i>	NP			+			+		+												
<i>Trifolium pratense</i>	NP		+		+																
<i>Trifolium repens</i>	NP				+		+		+	+				+							
<i>Tussilago farfara</i>	NP											+						+			
<i>Verbascum phlomoides</i>	NP								+										+		
<i>Verbascum phoeniceum</i>	NP								+			+						+			
<i>Veronica chamaedrys</i>	NP				+	+							+						+		
<i>Veronica officinalis</i>	NP								+				+	+				+	+		
<i>Veronica paniculata</i>	NP								+				+	+				+	+		
<i>Veronica spicata</i>	NP											+						+	+		
<i>Viburnum opulus</i>	NP												+						+		
<i>Vicia angustifolia</i>	NP				+		+														
<i>Vicia cracca</i>	NP						+	+		+			+	+	+			+	+		
<i>Vicia hirsuta</i>	NP				+	+							+							+	
<i>Vicia tenuifolia</i>	NP	+							+			+	+				+				
<i>Viola arvensis</i>	NP			+		+															
<i>Artemisia absinthium</i>	P				+			+		+			+		+						
<i>Descurainia sophia</i>	P																			+	
<i>Hypericum perforatum</i>	P		+		+			+					+					+			
<i>Plantago lanceolata</i>	P					+	+					+	+	+	+		+	+	+	+	
<i>Plantago media</i>	P									+	+	+	+	+	+	+	+	+	+	+	
<i>Potentilla anserina</i>	P										+	+		+	+	+			+		
<i>Potentilla argentea</i>	P											+	+					+	+		
<i>Potentilla heptaphylla</i>	P											+	+					+			
<i>Potentilla recta</i>	P	r																			
<i>Ranunculus acris</i>	P							+													
<i>Ranunculus bulbosus</i>	P											+						+			
<i>Rosa canina</i>	P								+	+			+	+				+	+		
<i>Rosa sherardii</i>	P										+				+						

Explanation: Type of forage: NP: pollen and nectar reward, P: pollen reward, NF: non forage species; Cover-abundance scale: r: 1 to 5 individuals; +: a few individuals (< 20) with cover < 5%; 1: many individuals (20 – 100) with cover < 5%; 2: 5% – 25% cover; 3: 25% – 50% cover; 4: 50% – 75% cover; 5: 75% – 100% cover.