

Ecography

ECOG-00185

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Supplementary material

Appendix 1

Species of which five or more seedlings emerged from samples of manure of grazing livestock and mud collected from motor vehicles in a rural landscape in southern Sweden. Species highlighted in green are local grassland specialists, species in red are national invasive species, and * denotes species not present in local species pool. Indicator species for the two vectors are shown in the right-hand column, with the rank given in square brackets, where [1] is the clearest indicator species.

	Cattle	Horse	Sheep	Car	Tractor	IndVal
Number of samples	24	4	3	17	31	
Total sample volume (L)	47.2	8	2.4	4.725	30.35	
<i>Achillea millefolium</i>	118	2	1	2	11	Manure [16]
<i>Agrostis canina</i>	23	5	1	5	920	
<i>Agrostis capillaris</i>	12940	365	481	1	282	Manure [4]
<i>Agrostis gigantea/stolonifera</i>	1796	86	96	2	58	Manure [3]
<i>Agrostis vinealis</i>	5288	198	185	0	166	Manure [8]
<i>Anthoxanthum odoratum</i>	16	0	1	0	0	Manure [29]
<i>Anthriscus sylvestris</i>	0	0	0	0	6	
<i>Arabidopsis thaliana</i>	13	0	3	0	1	Manure [28]
<i>Arenaria serpyllifolia</i>	74	0	1	0	1	Manure [17]
<i>Artemisia vulgaris</i>	0	1	0	4	271	Motors [5]
<i>Avena sativa</i>	4	0	0	0	75	
<i>Barbarea vulgaris</i>	0	0	0	0	6	
<i>Betula pendula</i>	9	6	1	6	52	
<i>Bidens tripartita</i>	0	0	0	0	6	
<i>Brassica napus</i>	0	0	0	0	116	
<i>Campanula rotundifolia</i>	15	0	0	0	0	
<i>Capsella bursa-pastoris</i>	94	0	3	11	55	
<i>Carex</i> spp	21	0	1	0	5	Manure [27]
<i>Cerastium fontanum</i>	211	11	6	9	919	
<i>Chenopodium album</i>	2	0	0	3	96	Motors [7]
<i>Chenopodium polyspermum</i>	1	0	0	0	11	
<i>Cirsium arvense</i>	0	0	0	0	9	
<i>Dactylis glomerata</i>	3	0	0	2	166	Motors [10]
<i>Danthonia decumbens</i>	7	13	3	0	1	Manure [31]
<i>Deschampsia cespitosa</i>	265	5	8	3	63	Manure [9]
<i>Deschampsia flexuosa</i>	5	0	0	0	0	Manure [37]
<i>Elytrigia repens</i>	4	0	0	0	7	
<i>Epilobium</i> spp	31	36	0	7	34	Manure [19]
<i>Erophila verna</i>	11	1	0	0	3	Manure [32]
<i>Erysimum cheiranthoides</i>	0	0	0	0	12	
<i>Festuca arundinacea/gigantea/pratensis</i>	34	1	0	5	35	

<i>Festuca ovina</i>	262	5	16	1	2	Manure [10]
<i>Festuca rubra</i>	81	1	0	1	31	Manure [23]
<i>Galeopsis bifida/tetrahit</i>	0	0	0	0	32	
<i>Galium album</i>	43	0	0	1	9	
<i>Galium aparine</i>	0	0	0	3	22	Motors [9]
<i>Galium odoratum*</i>	4	1	0	0	0	
<i>Galium verum</i>	66	1	0	0	1	Manure [39]
<i>Gnaphalium uliginosum</i>	0	0	0	1	115	Motors [14]
<i>Hordeum vulgare*</i>	0	0	0	0	10	
<i>Hypericum perforatum</i>	6	1	0	0	0	Manure [38]
<i>Juncus bufonius</i>	3	1	0	2	90	
<i>Juncus effusus</i>	13	0	0	0	18	
<i>Knautia arvensis</i>	3	2	0	1	1	
<i>Lamium amplexicaule</i>	0	0	0	0	11	
<i>Lamium purpureum</i>	0	0	0	0	40	
<i>Lapsana communis</i>	0	0	0	0	24	Motors [12]
<i>Lathyrus niger</i>	5	0	0	0	0	Manure [40]
<i>Lolium perenne</i>	58	3	0	4	9	Manure [22]
<i>Lotus corniculatus</i>	11	0	0	0	0	Manure [30]
<i>Luzula spp</i>	1482	23	35	0	1	Manure [2]
<i>Lychnis viscaria</i>	7	0	0	0	0	
<i>Matricaria matricarioides</i>	0	3	0	68	331	Motors [1]
<i>Matricaria recutita</i>	0	2	0	6	161	Motors [4]
<i>Mycelis muralis</i>	2	0	0	0	31	
<i>Myosotis spp</i>	0	0	0	1	101	Motors [8]
<i>Myosurus minimus</i>	67	0	3	3	83	
<i>Persicaria lapathifolia</i>	1	0	0	0	27	
<i>Phleum pratense</i>	250	29	20	0	70	Manure [12]
<i>Plantago lanceolata</i>	117	0	0	0	0	Manure [15]
<i>Plantago major</i>	11	2	0	208	901	Motors [2]
<i>Poa angustifolia/compressa</i>	922	201	50	5	34	Manure [1]
<i>Poa annua</i>	275	138	33	183	728	
<i>Poa nemoralis</i>	6	0	0	0	0	
<i>Poa pratensis</i>	741	49	24	15	1400	
<i>Poa trivialis</i>	504	44	10	35	1621	
<i>Polygonum aviculare</i>	0	0	0	21	40	Motors [11]
<i>Potentilla argentea</i>	14	2	0	0	0	Manure [25]
<i>Potentilla crantzii/tabernaemontani</i>	9	1	0	0	0	Manure [33]
<i>Prunella vulgaris</i>	4	3	0	0	3	
<i>Ranunculus acris</i>	68	0	1	0	7	Manure [24]
<i>Ranunculus bulbosus/auricomus</i>	25	0	0	0	3	
<i>Ranunculus repens</i>	51	4	0	3	25	Manure [20]
<i>Rumex acetosa</i>	6	0	0	0	0	Manure [34]
<i>Rumex acetosella</i>	33	2	6	1	0	Manure [26]
<i>Rumex crispus/longifolius</i>	4	0	0	0	9	

<i>Sagina procumbens</i>	18	23	0	1	8	
<i>Scleranthus annuus</i>	25	0	0	0	1	Manure [36]
<i>Sonchus arvensis</i>	1	0	0	0	10	
<i>Sonchus asper</i>	0	0	0	1	23	Motors [16]
<i>Sonchus oleraceus</i>	1	1	0	0	11	
<i>Spergula arvensis</i>	1	0	0	1	44	Motors [15]
<i>Stellaria graminea</i>	140	1	3	0	3	Manure [11]
<i>Stellaria media</i>	1	0	0	2	283	Motors [6]
<i>Taraxacum sect. Ruderalia</i>	3	0	0	0	87	
<i>Thlaspi arvense</i>	0	0	0	3	18	Motors [17]
<i>Trifolium arvense</i>	26	1	0	0	0	Manure [18]
<i>Trifolium aureum</i>	10	0	1	0	0	Manure [35]
<i>Trifolium medium</i>	8	0	0	0	0	
<i>Trifolium pratense</i>	59	0	3	0	3	Manure [21]
<i>Trifolium repens</i>	285	9	1	3	63	Manure [14]
<i>Tripleurospermum perforatum</i>	4	1	0	49	1271	Motors [3]
<i>Triticum aestivum</i> *	0	0	0	0	171	
<i>Typha angustifoliua/latifolia</i>	0	0	0	1	25	
<i>Urtica dioica</i>	74	0	0	1	127	
<i>Veronica agrestis/arvensis</i>	333	8	4	4	70	Manure [5]
<i>Veronica chamaedrys</i>	714	287	35	0	4	Manure [6]
<i>Veronica officinalis</i>	359	33	18	0	5	Manure [13]
<i>Veronica serpyllifolia</i>	646	219	17	9	223	Manure [7]
<i>Veronica verna</i>	7	0	0	0	0	
<i>Viola arvensis</i>	1	0	0	6	39	Motors [13]
Total species	102	49	33	49	107	
Total seedlings	28886	1835	1072	710	11908	

Species where fewer than five seedlings emerged:

Alopecurus pratensis, *Briza media*, *Calluna vulgaris*, *Campanula persicifolia*, *Carlina vulgaris*, *Erysimum strictum**, *Euphorbia helioscopia*, *Fallopia convolvulus*, *Filipendula ulmaria*, *Fragaria vesca*, *Galium spurium*, *Galium uliginosum*, *Geranium robertianum*, *Gnaphalium sylvaticum*, *Helianthemum nummularium*, *Helictotrichon pubescens*, *Herniaria glabra*, *Holcus lanatus**, *Hypericum maculatum*, *Lamium album*, *Lamium hybridum*, *Lathyrus pratensis*, *Leontodon autumnalis*, *Leucanthemum vulgare*, *Nicotiana tabacum**, *Persicaria maculosa*, *Phacelia tanacetifolia*, *Populus tremula*, *Potentilla erecta*, *Ranunculus sceleratus*, *Salix aurita/cinerea/caprea*, *Saxifraga granulata*, *Secale cereale*, *Senecio sylvaticus*, *Senecio vulgaris*, *Solidago canadensis*, *Spergularia rubra*, *Tanacetum vulgare*, *Urtica urens**, *Vaccinium myrtillus*, *Verbascum thapsus*, *Veronica beccabunga*, *Veronica persica*, *Vicia cracca*, *Vicia hirsuta*, *Vicia sativa*, *Vicia sepium*, *Viola tricolor*