521–531.

Appendix 2. Frequency of macrolichens on aspen in the studied stands, based on data from the basal 3 m of the trunk. The species are sorted first by photobiont and second in alphabetical order. Forest and agricultural stands are both ranked according to increasing stand age. The green-algal lichens are further classified as rich-bark (R) and poor-bark species (P). Stands marked with an asterisk are excluded from the comparison between forest and agricultural landscapes.

							Agriculture stands												Forest stands																		
Species	Abb.	Phoro-phyte[A]	Photo-biont[B]	Main dispersal strategies[C]	Community[D]	Red-listed[E]	1	2	3	4	5	6	7	8	9	10	11	12	1*	2*	3*	4*	5*	6	7	8	9	10	11	12	13	14	15	16	17	18	19*	20*
Anaptychia ciliaris	A.cil.	aa	A	sp	R										3																							
Bryoria spp. (3 species)	B.	g	A	fr, so	P						3					5	3									3											13	3
Cetraria chlorophylla	C.chl.	g	A	so	P												5	3													3						3	
Cetraria sepincola	C.sep.	(g)	A	sp	P															3																8		
Cladonia botrytes	Cl.bot.	g	A	sp	P																																3	
Cladonia chlorophaea	Cl.chl.	g	A	so	P																										5		3					
Cladonia coniocraea	Cl.con.	g	A	so	P																		3										5			10	5	
Cladonia digitata	Cl.dig.	g	A	so	P																										5							
Cladonia fimbriata	Cl.fim.	g	A	so	P															3	3										3		3			3	10	
Cladonia grayi	Cl.gra.	g	A	so	P												3																3				5	
Cladonia pleurota	Cl.ple.	g	A	so	P																												3					
Cladonia rangiferina	Cl.ran.	g	A	sp	P																3																3	
Cladonina pyxidata	Cl.pyx.	g	A	so, sp	P																												5					
Evernia prunastri	E.pru.	g	A	so	P									3												3												
Hypogymnia physodes	H.phy.	g	A	so	P				5		20		5	3		13	15	13		20	25	3	3		3	10		3	25	5	23	13	23	8	13	50	58	5
Hypogymnia tubulosa	H.tub.	g	A	so	P								3				3			3																8	13	
Melanelia exasperata	M.exa.	aa	A	sp	R								3							30	3																	
Melanelia exasperatula	M.exu.	aa	A	is	R				10								3																					
Melanelia glabrata	M.gla.	aa	A	is	R						3		3		3	15	5				3		10						13			3	3					
Melanelia olivacea	M.oli.	(g)	A	sp	P							5		5			5	10		8	3								13			3					20	
Melanelia septentrionalis	M.sep.	(g)	A	sp	P						8						5			5	13					3							3				3	
Parmelia sulcata	P.sul.	g	A	so	P			5	10		28		8	15		23	68	13	3	5	15	3	25	3	5	8			40		18	13	18		5	28	48	3
Parmeliopsis ambigua	P.amb.	g	A	so	P											3	5	3				3				3				3	8	8	20			38	45	3

Parmeliopsis hyperopta	P.hyp.	g	A	so	P											3	3	3							3				5	8	20		3	30	45	3
Phaeophyscia ciliata	Ph.cil.	aa	A	sp	R		43	73	78	3	45	85	60	28	58	45	55	25		80	20		55					18	3	3			5			3	
Phaeophyscia nigricans	Ph.nig.	aa	A	so	R			8	3			13	8				30																				
Phaeophyscia orbicularis	Ph.orb.	aa	A	so	R		10	23	100		45	60	50	5	15	8	100																				
Physcia adscendens	Ph.ads.	aa	A	so	R			3	8		10		5		3	8	23																				
Physcia aipolia	Ph.aip.	aa	A	sp	R		53		98		38	95	93	55		63	13	10		80	58		15					60	3							8	
Physcia alnophila	Ph.aln.	aa	A	sp	R		98	95	10	58	73	13	25	95	93	70	98	85		88	80	73	93	25	73	50	10	13	75	48	55	30	35	40	48	28	50	8
Physcia caesia	Ph.cae.	aa	A	so	R				15			10	13			3																						
Physcia stellaris	Ph.ste.	aa	A	sp	R		60	85	88	50	80	100	98	80	70	73	100	83		30	45		43			3			25							3	
Physcia tenella	Ph.ten.	aa	A	so	R				10				3			45	13	5								3											
Physconia distorta	Ph.dis.	aa	A	sp	R												3																				
Platismatia glauca	P.glau.	g	A	is, so	P																																	3
Ramalina dilacerata	R.dil.	aw	A	sp	P						3			8		3		5								3			10									
Ramalina farinacea	R.far.	g	A	so	P												3	5								3			3									3
Ramalina sinensis	R.sin.	aa	A	sp	R	NT	5	5			13	5	8	13			18	8		48	3		3		3				10									
Usnea spp. (2 species)	U.	g	A	fr, so	P						3	5					3												8							3	5	
Vulpicida pinastri	V.pin.	g	A	so	P									3			5			3		3	3	3	3	3			13	3	18	8	25		5	33	53	5
Xanthoria parietina	X.par.	aa	A	sp	R		63	98	100	15	53	100	100	80	65	70	100	15		28	55		23		3				3									
Collema curtisporum	C.cur.	aa	C	sp		EN																				5		8			23	20	5			15	38	18
Collema fragrans	C.fra.	asa	C	sp		EN																													3			
Collema furfuraceum	C.fur.	aa	C	is		NT									3									3		10		30	5	8	30	73	30	15	30	65	45	40
Leptogium cyanescens	L.cya.	aw	C	is		VU		33	3			15																										
Leptogium lichenoides	L.lic.	aw	C	fr, sp				3																														
Leptogium saturninum	L.sat.	a	C	is					3		10				13	23	5	8				8	3			55	8	85	45	58	73	90	83	83	93	78	78	98
Lobaria pulmonaria	L.pul.	aw	C	so, is																											18	13			3			
Nephroma arcticum	N.arc.	g	C	sp																																	8	
Nephroma bellum	N.bel.	aw	C	sp																						3	5				25	8	25	5	3	5	18	5
Nephroma parile	N.par.	aw	C	so				5			5	3			3												3				15	3	3			3	15	3
Nephroma resupinatum	N.res	aw	C	sp																									3				3		3		5	15
Pannaria pezizoides	P.pez.	aa	C	sp																													5					
Peltigera aphthosa	P.aph.	g	C	sp				3																3											3		3	5
Peltigera canina	P.can.	aw	C	sp											5			13																				
Peltigera didactyla	P.did.	g	C	sp					5																						3							

Peltigera leucophlebia	P.leu.	aw	C	sp																				3											3		3
Peltigera membranacea	P.mem.	aw	C	sp																	5	3				3	3	8	8	3	5	5	3	18	13	13
Peltigera neckeri	P.nec.	g	C	sp		13																															
Peltigera praetextata	P.pra.	aw	C	ph		5				3		5	5						3				3	13	3		3		5	25	3			10	15	28
No. of specialists					7	12	13	4	12	12	13	9	13	12	14	10	0	7	9	2	9	3	5	9	5	5	13	6	10	10	11	6	8	10	11	10
No. of generalists					0	3	3	0	5	2	3	5	0	5	13	7	1	8	6	4	4	3	3	9	0	1	6	3	10	6	12	1	5	10	18	9
No. of green-algae lichens					7	9	13	4	15	11	16	13	8	16	26	15	1	15	14	5	11	3	6	13	1	2	14	6	11	8	14	3	5	12	19	9
No. of rich bark species					7	8	11	4	9	9	13	7	8	10	13	7	0	7	8	1	7	1	3	3	1	1	7	3	2	2	2	2	1	2	3	1
No. of poor bark species					0	1	2	0	6	2	3	6	0	6	13	8	1	8	6	4	4	2	3	10	0	1	7	3	9	6	12	1	4	10	16	8
No. of cyanolichens					0	6	3	0	2	3	0	1	5	1	1	2	0	0	1	1	2	3	2	5	4	4	5	3	9	8	9	4	8	8	10	10
Total number of species					7	15	16	4	17	14	16	14	13	17	27	17	1	15	15	6	13	6	8	18	5	6	19	9	20	16	23	7	13	20	29	19

A. Phorophyte: aa=aspen, aw=aspen and goat-willow, collectively termed aspen specialists. These species may in other areas also occur on other phorophytes. g=generalist species, (g) generalist species mainly confined to deciduous trees. Classification according to Hallingbäck (1995) and Hedenås and Ericson (2000).
B. Photobiont: A=green algae, C=cyanobacteria.
C. Dispersal strategies: sexual dispersal, sp=spore; asexual dispersal, is=isidia, ph=phyllidia, so=soredia.
D. R, rich-bark species (*Xanthorion* species), and P, poor-bark species (*Physodion* species). Classification according to Du Reitz (1945), Almborn (1955), Barkman (1958), James et al. (1977).
E. Red-listed: NT= Near threatened, VU= Vulnerable, EN= Endangered (Gärdenfors 2000).