

Part I (chapter 6.1): Identifying ozone sensitive taxa from experimental studies - native herbaceous and pasture plants

Table 1: Effects of ozone on symptom expression and growth parameters on native herbaceous or pasture plant species. native = native to Germany; yes = native, neo. = neophytes, arch. = archeophytes; end. = "endangered in Germany" according to German Bundesamt für Naturschutz, Floraweb: <http://www.floraweb.de/index.html>; yes = endangered, (yes) = classified near-threatened; life h. = life history: a= annual, b =biennial, p=perennial; ref. = ozone reference treatment: CF = charcoal filtered air, CF+ = CF + 25 or 30 ppb for 7 or 8 h day⁻¹; high = highest ozone treatment (ppb, 7 or 8 h day⁻¹), no. = no. of high ozone treatments, AA ≈ NF ≅ ambient air; GH = greenhouse, OTC = open top chamber (* additional treatments with ozone concentrations > 100 ppb disregarded, # unable to separate treatments with lower ozone concentrations); sen. = senescence, spec. = ozone-specific symptoms, § dynamic diurnal pattern up to 100 ppb

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Achillea millefolium</i>	Asteraceae	yes	no	p	OTC	CF+	AA+50	3	none	spec.	Bender et al. (2002)
					OTC	CF	2×AA	3	none	yes	Bungener et al. (1999a,b)
<i>Achillea ptarmica</i>	Asteraceae	yes	no	p	OTC	CF	AA+50	3	shoot reduction	sen.	Franzaring et al. (2000)
<i>Aegilops geniculata</i>	Poaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
					OTC	CF	AA+40	2	root reduction		Gimeno et al. (2004)
<i>Aegilops triuncialis</i>	Poaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
					OTC	CF	AA+40	2	(decline root/shoot)		Gimeno et al. (2004)
<i>Agrostemma githago</i>	Caryophyllaceae			a	OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
<i>Agropyron smithii</i>	Poaceae	no	no	p	controlled	?	95	1	growth reduction		Volin et al. (1998)
<i>Agrostis capillaris</i>	Poaceae	yes	no	p	GH	CF	~ 80	1	none	sen.	Ashenden et al. (1996)
					GH	CF	80	1	none	no	Ashmore et al. (1996)
					soldardomes	CF	dyn [§]	1	none	sen.	Hayes et al. (2006)
					OTC	CF+	AA+50	3	none	yes	Tonneijck et al. (2004)
					controlled	?	55	2	(shoot reduction)	yes	Mortensen (1992)
controlled	?	80	2	none	no	Mortensen (1994)					
<i>Agrostis stolonifera</i>	Poaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
<i>Agrostis vinealis</i>	Poaceae	yes	no	p	soldardomes	CF	dyn. [§]	1	none	sen.	Hayes et al. (2006)
<i>Alopecurus pratensis</i>	Poaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
<i>Ambrosia artemisiifolia</i>	Asteraceae	no	no	a	?	CF	65	1	none	no	Ziska (2002)
<i>Andropogon gerardii</i>	Poaceae	no		p	OTC	CF	2×NF	2	growth reduction		Lewis et al. (2006)
<i>Angelica archangelica</i>	Apiaceae	yes	no	b	controlled	?	96	2	shoot reduction		Mortensen (1993)
<i>Antennaria dioica</i>	Asteraceae	yes	yes	p	controlled	?	96	2	shoot reduction		Mortensen (1993)
<i>Anthoxanthum odoratum</i>	Poaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
					OTC	CF+	AA+50	3	none	no	Bender et al. (2002)
					soldardomes	CF+20	85	3	none	sen.	Dawney & Mills (2009)
					soldardomes	CF	dyn.§	1	none	sen.	Hayes et al. (2006)
					OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)
<i>Anthyllis cytisoides</i>	Fabaceae	no	no	p	controlled		120 #	3		yes	Skelly et al. (1999)
<i>Anthyllis cornicina</i>	Fabaceae	no	no	p	OTC	CF	AA+40	2		no	Bermejo et al. (2003)
					OTC	CF	AA+40	2	(increase in stem weight)		Gimeno et al. (2004)
<i>Anthyllis lotooides</i>	Fabaceae	no	no	p	OTC	CF	AA+40	2		no	Bermejo et al. (2003)
					OTC	CF	AA+40	2	(growth reduction)		Gimeno et al. (2004)
<i>Anthyllis vulneraria</i>	Fabaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
					controlled	CF	70	1	(growth reduction)	no	Warwick & Taylor (1995)
					OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)
<i>Apocynum androsaemifolium</i>	Apocynaceae	no	no	p	OTC	CF	AA	1	reduction in flower/fruit production	no	Bergweiler & Manning (1999)
<i>Apocynum cannabinum</i>	Apocynaceae	no	no	p	GH	40	80	1		yes	Kline et al. (2009)
<i>Arabis petraea</i> ¹	Brassicaceae	yes	no		soldardomes	CF	dyn.§	1	none	sen.	Hayes et al. (2006)
<i>Armeria maritima</i>	Plumbaginaceae	yes	no	p	soldardomes	CF	dyn.§	1	shoot reduction	no	Hayes et al. (2006)
<i>Arrhenatherum elatius</i>	Poaceae	yes	no	p	GH	CF	80	1	(growth reduction)	no	Ashmore et al. (1996)
					OTC	CF	2xAA	3	none	spec.	Bungener et al. (1999a,b)
					controlled	CF	70	1	none	no	Reiling & Davison (1992)
<i>Asclepias incarnata</i>	Apocynaceae	no	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Asclepias syriaca</i>	Apocynaceae	no	no	p	GH	40	80	1		yes	Kline, L. J., et al. (2009)
<i>Astragalus frigidus</i>	Fabaceae	yes	no	p	controlled	?	80	2	none	yes	Mortensen (1994)
<i>Astrantia major</i>	Apiaceae	yes	no	p	controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Atriplex patula</i>	Amaranthaceae	arch.	no	a	OTC	CF(+)	0.6xAA+30	2		(sen.)	Bergmann et al. (1995)
					OTC	CF(+)	AA+20	3	none		Bender et al. (2002)
<i>Avena barbata</i>	Poaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
<i>Avena fatua</i>	Poaceae	arch.	no	a	controlled	CF	70	1	none	no	Reiling & Davison (1992)

¹ = *Cardaminopsis petraea*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references	
<i>Avena sterilis</i>	Poaceae	neo.	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)	
					OTC	CF	AA+40	2	(decline root/shoot)		Gimeno et al. (2004)	
<i>Avenula pratensis</i> ²	Poaceae	yes	(yes)	p	GH	CF	80	1	none	no	Ashmore et al. (1996)	
<i>Baileya pleniradiata</i>	Asteraceae	no	no	a/b	OTC	CF	100	2		no	Thompson et al. (1984)	
<i>Biserrula pelecinus</i>	Fabaceae	no	no	p	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)	
					OTC	CF	AA+40	2	growth reduction		Gimeno et al. (2004)	
<i>Bouteloua curtipendula</i>	Poaceae	no	no	p	controlled	?	95	1	none		Volin et al. (1998)	
<i>Brachypodium pinnatum</i>	Poaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)	
					controlled	CF	70	1	none	no	Reiling & Davison (1992)	
<i>Briza maxima</i>	Poaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)	
										none		Gimeno et al. (2004)
										sen.	Sanz et al. (2011)	
<i>Briza media</i>	Poaceae	yes	(yes)	a	OTC	CF	90	3	none		Ashmore et al. (1995)	
					OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)	
					GH	CF	80	1	none	no	Ashmore et al. (1996)	
<i>Bromus arvensis</i>	Poaceae			a	OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)	
<i>Bromus erectus</i>	Poaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)	
					GH	CF	80	1	none	no	Ashmore et al. (1996)	
					OTC	CF	2xAA	3	none	yes	Bungener et al. (1999a,b)	
					controlled	CF	70	1	none	no	Reiling & Davison (1992)	
<i>Bromus hordeaceus</i>	Poaceae	yes	no	a/b	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)	
					OTC	CF	NF+40	2	increased growth		Sanz et al. (2015)	
					OTC	CF	AA+40	2	(root reduction)		Gimeno et al. (2004)	
<i>Bromus rubens</i>	Poaceae	yes	no	a	OTC	CF	100	2		no	Thompson et al. (1984)	
<i>Bromus sterilis</i>	Poaceae	arch.	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)	
					OTC	CF	AA+40	2	none		Gimeno et al. (2004)	
					controlled	CF	70	1	none	no	Reiling & Davison (1992)	
<i>Camissonia californica</i>	Onoagraceae	no	no	a	OTC	CF	100	2		yes	Thompson et al. (1984)	
<i>Camissonia claviformis</i>	Onoagraceae	no	no	a	free-air	AA	2xAA	2		yes	Bytnerowicz et al. (1988)	

² = *Helictotrichon pratense*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
					OTC	CF	100	2		yes	Thompson et al. (1984)
<i>Camissonia hirtella</i>	Onoagraceae	no	no	a	free-air	AA	2×AA	3		yes	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Campanula rotundifolia</i>	Campanulaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)
					GH	CF	80	1	growth reduction	no	Ashmore et al. (1996)
					soldardomes	CF	dyn.§	1	one	no	Hayes et al. (2006)
					controlled	?	80	?	none	no	Mortensen & Nilsen (1992)
<i>Capsella bursa-pastoris</i>	Brassicaceae	yes	no	a/b	OTC	CF(+)	AA+20	3	seed reduction		Bender et al. (2006a)
								4		no	Bergmann et al. (1999)
<i>Carex arenaria</i>	Cyperaceae	yes	no	p	soldardomes	CF+	85-100	3	root reduction	sen.	Jones et al. (2010)
<i>Carex atrofusca</i>	Cyperaceae	no	no	p	controlled	?	80	2	growth reduction	yes	Mortensen (1994)
<i>Carex demissa</i>	Cyperaceae	yes	no	p	soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
<i>Carex echinata</i>	Cyperaceae	yes	no	p	soldardomes	CF	dyn.§	1	none	spec.; sen.	Hayes et al. (2006)
<i>Carex laevigata</i>	Cyperaceae	yes	yes	p	soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
<i>Carex nigra</i>	Cyperaceae	yes	no	p	OTC	CF	AA+50	3	(increases growth)	(sen.)	Franzaring et al. (2000)
<i>Carex panicea</i>	Cyperaceae	yes	(yes)	p	soldardomes	CF	dyn.§	1	none	spec.	Hayes et al. (2006)
<i>Carum carvi</i>	Apiaceae	yes	(yes)	b	OTC	CF	2×AA	3	none	spec.	Bungener et al. (1999a,b)
<i>Caulanthus cooperi</i>	Brassicaceae	no	no	a	free-air	AA	2×AA	4		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Centaurea cyanus</i>	Asteraceae	yes	no	a	OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
<i>Centaurea jacea</i>	Asteraceae	yes	no	p	OTC	CF	2×AA	3	none	spec.	Bungener et al. (1999a,b)
					controlled	?	80	?		yes	Mortensen & Nilsen (1992)
<i>Centaurea scabiosa</i>	Asteraceae	yes	no	p	controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Centuarea nigra</i>	Asteraceae	yes	no	p	controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Cerastium fontanum</i>	Caryophyllaceae	yes	no	p/a	GH	CF	80	1	none	no	Ashmore et al. (1996)
					controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
<i>Chaenactis carphoclinia</i>	Asteraceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Chaenactis fremontii</i>	Asteraceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Chaenactis stevioides</i>	Asteraceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Chaneactis carphoclinia</i>	Asteraceae	no	no	a	free-air	AA	2×AA	5		no	Bytnerowicz et al. (1988)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Chaneactis stevioides</i>	Asteraceae	arch.	no	a	free-air	AA	2×AA	6		no	Bytnerowicz et al. (1988)
<i>Chenopodium album</i>	Amaranthaceae	arch.	no	a	OTC	CF(+)	AA+20	3	reduction in germination rate		Bender et al. (2006a)
					OTC	CF(+)	CF+70	2	none	sen.	Bergmann et al. (1995), (1999)
					OTC	CF+	0.6×AA+30	1	single leaf dm increase		Bergmann et al. (1996)
					OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
					controlled	CF	70	1	none	yes	Reiling & Davison (1992)
					controlled	?	40	1	increased biomass		Romaneciene, R., et al. (2008)
<i>Chorizanthe brevicornu</i>	Polygonaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Chrysanthemum leucanthemum</i>	Asteraceae	yes	no	p	OTC	CF	2×AA	3	growth reduction	spec.	Bungener et al. (1999a,b)
					controlled	?	80	?		yes	Mortensen & Nilsen (1992)
<i>Cirsium acaule</i>	Asteraceae	yes	no	p	controlled	CF	70	1	(slight growth reduction)	no	Warwick & Taylor (1995)
<i>Cirsium palustre</i>	Asteraceae	yes	no	b	controlled	?	96	2	none		Mortensen (1993)
<i>Cirsium arvense</i>	Asteraceae	yes	no	p	OTC	CF	90	1	root reduction	yes	Batty, K., et al. (2001)
					OTC	CF(+)	AA+20	3	none		Bender et al. (2006a)
					OTC	CF(+)	CF+70	2	none	spec.	Bergmann et al. (1995) (1999)
					soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
<i>Cirsium dissectum</i>	Asteraceae	neo.	yes	p	OTC	CF+	AA+50	3	none	no	Franzaring et al. (2003)
					OTC	CF	AA+50	3	(shoot reduction)	no	Franzaring et al. (2000)
<i>Cirsium eriophorum</i>	Asteraceae	yes	no	p	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Comarum palustre</i>	Rosaceae	yes	(yes)	p	controlled	?	80	2	growth reduction	yes	Mortensen (1994)
						CF	70	1	none	no	Batty et al. (2001)
<i>Conyza canadensis</i>	Asteraceae	neo.	no	a/b	GH	CF	75	1*		yes	Grantz et al. (2008)
<i>Coreopsis bigelovii</i>	Asteraceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Crepis biennis</i>	Asteraceae	arch.	no	b	OTC	CF	2×AA	3	none	spec.	Bungener et al. (1999a,b)
<i>Cryptantha angustifolia</i>	Boraginaceae	no	no	a	free-air	AA	2×AA	7		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Cryptantha circumscissa</i>	Boraginaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Cryptantha micrantha</i>	Boraginaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Cryptantha nevadensis</i>	Boraginaceae	no	no	a	OTC	CF	100	2		yes	Thompson et al. (1984)
<i>Cryptantha pterocarya</i>	Boraginaceae	no	no	a	free-air	AA	2×AA	8		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Cynosurus cristatus</i>	Poaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
<i>Cynosurus echinatus</i>	Poaceae	no	no		OTC	CF	AA+40	2		no	Bermejo et al. (2003)
					OTC	CF	AA+40	2	(growth reduction)		Gimeno et al. (2004)
<i>Dactylis aschersoniana</i>	Poaceae	yes	no	p	OTC	CF	1.5×AA	2	none	yes	Pleijel & Danielsson (1997)
<i>Dactylis glomerata</i>	Poaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)
					GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	2×AA	3	none	yes	Bungener et al. (1999a,b)
					?	?	90	1	growth reduction		Horsman et al. (1980)
					controlled	?	55	2	shoot reduction	yes	Mortensen (1992)
					OTC	CF	1.5×AA	2	none	yes	Pleijel & Danielsson (1997)
					solardomes	AA-20	AA+70	7	(growth reduction)	yes	Wyness et al. on (2011)
<i>Danthonia decumbens</i>	Poaceae	yes	no	p	GH	CF	80	1	(enhanced growth)	no	Ashmore et al. (1996)
					OTC	CF	AA+50	3	none	no	Franzaring et al. (2000)
<i>Daucus carota</i>	Apiaceae	yes	no	p	OTC	CF(+)	AA+20	3	seeds reduction		Bender et al. (2006a)
					OTC	CF(+)	AA+20	4		spec.	Bergmann et al. (1999)
<i>Deschampsia cespitosa</i>	Poaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
<i>Deschampsia flexuosa</i>	Poaceae	yes	no	p	GH	CF	80	1	(enhanced growth)	no	Ashmore et al. (1996)
					controlled	CF	70	1	none	no	Reiling & Davison (1992)
<i>Descurainia pinnata</i>	Brassicaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Desmazeria rigida</i>	Poaceae	neo.	no	a	controlled	CF	70	1	none	no	Reiling & Davison (1992)
<i>Dianthus deltoides</i>	Caryophyllaceae	yes	no	p	OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
<i>Digitalis purpurea</i>	Scrophulariaceae	yes	no	b	controlled	CF	70	1	none	no	Batty et al. (2001)
					controlled	CF	80	2	growth reduction		Batty et al. (2001)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Echinacea purpurea</i>	Asteraceae	neo	no	p	OTC	CF	2×AA	2	(growth reduction)	yes	Szantoi et al. (2007)
<i>Elymus athericus</i> ³	Poaceae	yes	no	p	controlled	CF	75	1	shoot reduction delay in flowering	yes	van de Staaij et al. (1997)
<i>Epilobium angustifolium</i> ⁴	Onagraceae	yes	no	p/a	controlled	?	96	2	growth reduction		Mortensen (1993)
					controlled		120 #	3		yes	Skelly et al. (1999)
<i>Epilobium collinum</i>	Onagraceae	yes	no	p	controlled		120 #	3		yes	Skelly et al. (1999)
<i>Epilobium hirsutum</i>	Onagraceae	yes	no	p	controlled	CF	70	1	growth reduction	no	Batty et al. (2001)
					controlled	CF	80	2	growth reduction		Batty et al. (2001)
					controlled	CF	70	1	none	yes	Reiling & Davison (1992)
<i>Epilobium montanum</i>	Onagraceae	yes	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Eriastrum wilcoxii</i>	Polemoniaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Erigeron borealis</i>	Asteraceae	no	no	p	controlled	?	80	2	growth reduction	yes	Mortensen (1994)
<i>Eriogonum pusillum</i>	Polygonaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Eriophorum angustifolium</i>	Cyperaceae	yes	no	p	soldardomes	CF	dyn.§	1	none	spec.	Hayes et al. (2006)
					controlled	?	80	2	none	yes	Mortensen (1994)
<i>Eriophorum vaginatum</i>	Cyperaceae	yes	(yes)	p	free air	AA	2×AA	1	none		Morsky et al. (2011)
<i>Erodium cicutarium</i>	Geraniaceae	yes	no	a/b	free-air	AA	2×AA	9		yes	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Eschscholzia parishii</i>	Papaveraceae	no	no	a	OTC	CF	100	2		yes	Thompson et al. (1984)
<i>Eucrypta micrantha</i>	Boraginaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Eupatorium cannabinum</i>	Asteraceae	yes	no	p	controlled	CF	70	1	growth reduction	yes	Batty et al. (2001)
					controlled	CF	80	2	growth reduction		Batty et al. (2001)
					OTC	CF	AA+50	3	shoot reduction	spec.	Franzaring et al. (2000)
<i>Eupatorium perfoliatum</i>	Asteraceae	yes	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Festuca octoflora</i>	Poaceae	no	no	a	free-air	AA	2×AA	10		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Festuca ovina</i>	Poaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)
					GH	CF	80	1	none	no	Ashmore et al. (1996)

³ = *E. pycnanthus*⁴ = *Chamaenerion angustifolium*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
					soldardomes	CF	dyn.§	1	(shoot reduction)	sen.	Hayes et al. (2006)
					OTC	CF	1.5×AA	2	increase		Pleijel & Danielsson (1997)
					controlled	CF	70	1	none	no	Reiling & Davison (1992)
					controlled	CF	70	1	(growth reduction)	no	Warwick & Taylor (1995)
<i>Festuca pratensis</i>	Poaceae	yes	no	p	OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
					controlled	?	55	2	shoot reduction	yes	Mortensen (1992)
					controlled	?	80	2	none	yes	Mortensen (1994)
<i>Festuca rubra</i>	Poaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)
					GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	2×AA	3	stubble reduction	yes	Bungener et al. (1999a,b)
					soldardomes	CF	dyn.§	1	(shoot reduction)	sen.	Hayes et al. (2006)
					controlled	?	55	2	shoot reduction	yes	Mortensen (1992)
<i>Filipendula ulmaria</i>	Rosaceae	yes	no	p	controlled	CF	70	1	none	no	Batty et al. (2001)
					controlled	CF	80	2	none		Batty et al. (2001)
					OTC	CF	90	1	shoot reduction	yes	Batty et al. (2001)
<i>Fragaria vesca</i>	Rosaceae	yes	no	p	controlled	?	96	2	growth reduction		Mortensen (1993)
<i>Galinsoga parviflora</i>	Asteraceae	neo.	no	a	OTC	CF(+)	AA+20	3	foliage reduction (shoot, flower and seed red.)		Bender et al. (2006a) Bergmann et al. (1996)
									none	sen.	Bergmann et al. (1995), (1999)
<i>Galium saxatile</i>	Rubiaceae	yes	no	p	GH	CF	80	1	(growth reduction)	no	Ashmore et al. (1996)
					soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
<i>Gentiana asclepiadea</i>	Gentianaceae	yes	yes	p	controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Geranium robertianum</i>	Geraniaceae	yes	no	a/b	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Geranium sylvaticum</i>	Geraniaceae	yes	no	p	controlled	?	80	2	none	yes	Mortensen (1994)
<i>Geum rivale</i>	Rosaceae	yes	no	p	controlled	CF	70	1	none	no	Batty et al. (2001)
					controlled	CF	80	2	growth reduction		Batty et al. (2001)
<i>Geum urbanum</i>	Rosaceae	yes	no	p	controlled	CF	70	1	growth reduction	no	Batty et al. (2001)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Gilia stellata</i>	Polemoniaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Glebionis segetum</i> ⁵	Asteraceae	yes	no	a	OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)
<i>Gnaphalium norvegicum</i>	Asteraceae	yes	no	p	controlled	?	80	2	none	no	Mortensen (1994)
<i>Helianthemum nummularium</i>	Cistaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
<i>Helianthus hirsutus</i>	Asteraceae	no	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Hieracium pilosella</i>	Asteraceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)
<i>Holcus lanatus</i>	Poaceae	yes	no	p	GH	CF	80	1	growth reduction	no	Ashmore et al. (1996)
					soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
					controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
					OTC	CF+	AA+50	1	none	sen.	Tonneijck et al. (2004)
<i>Hordeum murinum</i>	Poaceae	arch.	no	a	controlled	CF	70	1	growth reduction	yes	Reiling & Davison (1992)
<i>Humulus lupulus</i>	Cannabaceae	yes	no	a	controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Hypericum perforatum</i>	Hyperaceae	no	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Hypericum perforatum</i>	Hyperaceae	yes	no	p	OTC	CF+	AA+50	3		no	Bender et al. (2002)
					controlled	?	80	?		yes	Mortensen & Nilsen (1992)
<i>Hypericum pulchrum</i>	Hyperaceae	yes	no	p	GH	CF	80	1	(growth reduction)	no	Ashmore et al. (1996)
<i>Hypochaeris radicata</i>	Asteraceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)
<i>Impatiens parviflora</i>	Balsaminaceae	neo.	no	a	OTC	CF(+)	AA+20	3	(shoot increase)		Bender et al. (2006a)
								4		no	Bergmann et al. (1999)
					controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Iris pseudacorus</i>	Iridaceae	yes	no	p	OTC	CF	90	1	none	no	Batty et al. (2001)
<i>Juncus effusus</i>	Juncaceae	yes	no	p	soldardomes	CF	dyn.§	1	(shoot reduction)	no	Hayes et al. (2006)
<i>Juncus squarrosus</i>	Juncaceae	yes	(yes)	p	soldardomes	CF	dyn.§	1	increase in shoot	no	Hayes et al. (2006)
<i>Knautia arvensis</i>	Caprifoliaceae	yes	no	p	OTC	CF	2xAA	3	none	spec.	Bungener et al. (1999a,b)
<i>Koeleria cristata</i>	Poaceae	no	no	p	controlled	?	95	1	none		Volin et al. (1998)
<i>Koeleria macrantha</i>	Poaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)

⁵ syn. *Chrysanthemum segetum*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
					GH	CF	80	1	(enhanced growth)	no	Ashmore et al. (1996)
					controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
<i>Lamottea diana</i> ⁶	Asteraceae	no	no	p	OTC	CF	AA+30	1	root reduction	yes	Calatayud et al. (2011)
<i>Langloisia schottii</i> ⁷	Polemoniaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Lathyrus pratensis</i>	Fabaceae	yes	no	p	OTC	CF	90	1	root reduction	yes	Batty et al. (2001)
<i>Leontodon autumnalis</i>	Asteraceae	yes	no	p	controlled	?	96	2	growth reduction		Mortensen (1993)
<i>Leontodon hispidus</i>	Asteraceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)
					GH	CF	80	1	growth reduction	no	Ashmore et al. (1996)
					OTC	CF	1.5xAA	2	none	no	Pleijel & Danielsson (1997)
<i>Lepidium lasiocarpum</i>	Brassicaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Lespedeza cuneata</i>	Fabaceae	no	no	p	OTC	CF	2xAA	2	(yield reduction)		Powel et al. (2003)
<i>Lolium multiflorum</i>	Poaceae	neo.	no	a/b/ p	OTC	CF	dyn. (0-150)	1	shoot and seed reduction		Martinez-Ghersa et al. (2008)
<i>Lolium perenne</i>	Poaceae	yes	no	p	GH	CF	ca. 80*	2	growth reduction	sen.	Ashenden et al. (1996)
					GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	2xAA	3	none	yes	Bungener et al. (1999a,b)
					?	?	90	1	reduction		Horsman et al. (1980)
					controlled	?	55	2	none	no	Mortensen (1992)
					controlled	CF	70	1	none	no	Reiling & Davison (1992)
<i>Lolium rigidum</i>	Poaceae	no	no	p	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
								2	none		Gimeno et al. (2004)
<i>Lotus corniculatus</i>	Fabaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)
					GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	2xAA	3	none	spec.	Bungener et al. (1999a,b)
					controlled	?	80	?	none	no	Mortensen & Nilsen (1992)
					controlled	CF	70	1	growth reduction	no	Warwick & Taylor (1995)
					OTC	CF	100	2		no	Thompson et al. (1984)

⁶ = *Carduncellus danius*⁷ = *Loeseliastrum schottii*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Lotus uliginosus</i> ⁸	Fabaceae	yes	no	p	OTC	CF	90	1	none	yes	Batty et al. (2001)
<i>Lupinus concinnus</i>	Fabaceae	no	no	a	free-air	AA	2×AA	11		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Lychnis flos-cuculi</i>	Caryophyllaceae	yes	(yes)	p	controlled	CF	70	1	(growth reduction)	no	Batty et al. (2001)
					OTC	CF	90	1	none	no	Batty et al. (2001)
					OTC	CF	2×AA	3	none	coloured	Bungener et al. (1999a,b)
					OTC	CF	AA+50	3	none	spec.	Franzaring et al. (2000)
					OTC	CF+	AA+50	1	none	yes	Tonneijck et al. (2004)
<i>Lychnis viscaria</i>	Caryophyllaceae	yes	(yes)	p	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Lythrum salicaria</i>	Lythraceae	yes	no	p	OTC	CF	90	1	none	no	Batty et al. (2001)
					OTC	CF	AA+50	3	none	no	Franzaring et al. (2000)
<i>Malacothrix glabrata</i>	Asteraceae	no	no	a	OTC	CF	100	2		yes	Thompson et al. (1984)
<i>Malva spp.</i>	Malvaceae				controlled		120 #	3		yes	Skelly et al. (1999)
<i>Malva moschata</i>	Malvaceae	yes	no	p	OTC	CF(+)	AA+20	4	none		Bender et al. (2006a)
											no
<i>Malva parviflora</i>	Malvaceae	yes	no	a/p	GH	CF	100	2	shoot reduction	yes	EI-Khatib (2003)
<i>Malva sylvestris</i>	Malvaceae	yes	no	p	OTC	CF(+)	AA+20	4	foliage, shoot and seeds reduction		Bender et al. (2006a)
									foliage reduction	sen.	Bergmann et al. (1996)
										spec.	Bergmann et al. (1995)
						CF	NF	1	none		Bergmann et al. (1999)
<i>Matricaria chamomilla</i> ⁹	Asteraceae	arch.	no	a	OTC	CF(+)	AA+20	4	foliage reduction		Bender et al. (2006a)
									seed reduction		
									flower reduction		Bergmann et al. (1996)
									none	sen.	Bergmann et al. (1995), (1999)
<i>Matricaria discoidea</i>	Asteraceae	neo.	no	a	OTC	CF(+)	AA+20	4	(foliage increase, seed reduction)		Bender et al. (2006a)

⁸ = *Lotus pedunculatus*⁹ = *Matricaria recutita* = *Chamomilla recutita*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
									(shoot reduction) reduction in no. of inflorescences		Bergmann et al. (1996)
									none	sen.	Bergmann et al. (1995), (1999)
<i>Matricaria perforata</i>	Asteraceae	arch.	no	a	OTC	CF(+)	AA+20	4	shoot increase		Bender et al. (2006a) Bergmann et al. (1999)
<i>Medicago minima</i>	Fabaceae	yes	yes	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
					OTC	CF	AA+40	2	growth reduction		Gimeno et al. (2004)
<i>Medicago sativa</i>	Fabaceae	yes	no	p	GH	CF	100	2	shoot reduction	yes	El-Khatib (2003)
<i>Melica nutans</i>	Poaceae	yes	no	p	controlled	?	80	2	none	yes	Mortensen (1994)
<i>Melilotus indicus</i>	Fabaceae	neo.	no	a	GH	CF	100	2	shoot reduction	yes	El-Khatib (2003)
<i>Mentha aquatica</i>	Lamiaceae	yes	no	p	OTC	CF	90	1	shoot reduction	yes	Batty et al. (2001)
<i>Mentha sp.</i>	Lamiaceae	yes	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Mentzelia albicaulis</i>	Losaceae	no	no	a	OTC	CF	100	2		yes	Thompson et al. (1984)
<i>Micropyrum tenellum</i>	Poaceae	yes	yes	a	OTC	CF	AA+40	2		no	Bermejo et al. (2003)
<i>Molinia caerulea</i>	Poaceae	yes	no	p	OTC	CF	AA+50	3	shoot increase	sen.	Franzaring et al. (2000)
					OTC	CF+	AA+50	3	none	no	Franzaring et al. (2003)
					OTC	CF+	AA+50	3	none	sen.	Tonneijck et al. (2004)
<i>Myosotis scorpioides</i>	Boraginaceae	yes	no	p	controlled	CF	70	1	(total rgr reduction)	no	Batty et al. (2001)
<i>Nardus stricta</i>	Poaceae	yes	(yes)	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
					soldardomes	CF	dyn.§	1	shoot reduction	spec.	Hayes et al. (2006)
<i>Narthecium ossifragum</i>	Liliaceae	yes	yes	p	soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
<i>Oenothera californica</i>	Onagraceae	no	no	p	free-air	AA	2×AA	12		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Oenothera rosea</i>	Onagraceae	no	no	p	controlled		120 #	3		yes	Skelly et al. (1999)
<i>Onobrychis sativa</i>	Fabaceae	no	no	p	OTC	CF	2×AA	3	none	spec.	Bungener et al. (1999a,b)
<i>Ornithopus compressus</i>	Fabaceae	no	no	a	OTC	CF	AA+40	2		no	Bermejo et al. (2003)
					OTC	CF	AA+40	2	growth reduction		Gimeno et al. (2004)
<i>Oxalis acetosella</i>	Oxalidaceae	yes	no	p	soldardomes	CF	dyn.§	1	none	spec.	Hayes et al. (2006)
<i>Oxyria digyna</i>	Polygonaceae	yes	no	p	soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
					controlled	?	96	2	growth reduction		Mortensen (1993)

species	family	native	end.	life h.	exposure controlled	ref. ?	high ozone 80	no. ?	growth effect	injury no	references
<i>Papaver argemone</i>	Papaveraceae	arch.	no	a	OTC	CF(+)	AA+20	4	none	sen.	Mortensen & Nielsen (1992) Bender et al. (2006a) Bergmann et al. (1999)
<i>Papaver dubium</i>	Papaveraceae	arch.	no	a	OTC	CF(+)	AA+20	4	(foliage reduction) foliage and shoot reduction	no	Bender et al. (2006a) Bergmann et al. (1996) Bergmann et al. (1999)
<i>Papaver rhoeas</i>	Papaveraceae	arch.	no	a	OTC	CF(+)	AA+20	3	reduction in germination rate (seed reduction)	no	Bender et al. (2006a) Bergmann et al. (1999)
<i>Paspalum notatum</i>	Poaceae	no	no	p	OTC	CF	2×AA	2	growth reduction		Munferring et al. (2000)
<i>Pectocarya heterocarpa</i>	Boraginaceae	no	no	a	OTC	CF	100	2		yes	Thompson et al. (1984)
<i>Pectocarya platycarpa</i>	Boraginaceae	no	no	a	OTC	CF	100	2		yes	Thompson et al. (1984)
<i>Perityle emoryi</i>	Asteraceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Phacelia campanularia</i>	Boraginaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Phacelia crenulata</i>	Boraginaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Phalaris aquatica</i>	Poaceae	no	no	p	?	?	90	1	growth reduction		Horsman et al. (1980)
<i>Phleum alpinum</i> ¹⁰	Poaceae	yes	no	p	OTC	CF	AA+50	3	growth reduction		Danielsson et al. (1999)
					OTC	CF	1.5×AA	2	none	yes	Pleijel & Danielsson (1997)
					controlled	?	96	2	growth reduction		Mortensen (1993)
<i>Phleum pratense</i>	Poaceae	yes	no	p	OTC	CF	AA+50	3	growth reduction		Danielsson et al. (1999)
					controlled	?	55	2	shoot reduction	yes	Mortensen (1992)
					controlled	?	80	1	none	yes	Mortensen (1999)
<i>Phragmites australis</i>	Poaceae	yes	no	p	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Pilosella officinarum</i>	Asteraceae	yes	no	p	controlled	CF	70	1	(growth reduction)	no	Warwick & Taylor (1995)
<i>Plantago sp.</i>	Plantaginaceae				GH		90	2*		yes	Orendovici et al. (2003)
<i>Plantago coronopus</i>	Plantaginaceae	yes	no	a/b	controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
<i>Plantago insularis</i>	Plantaginaceae	no	no	a	free-air	AA	2×AA	13		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)

¹⁰ = *Phleum commutatum*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Plantago lanceolata</i>	Plantaginaceae	arch.	no	p	GH	CF	80	1	(growth reduction)	no	Ashmore et al. (1996)
					OTC	CF	2×AA	3	growth reduction	spec.	Bungener et al. (1999a,b)
					OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
					soldardomes	CF	dyn.§	1	shoot increase	no	Hayes et al. (2006)
					controlled	?	80	?	growth reduction	yes	Mortensen & Nilsen (1992)
					controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
					OTC	CF	AA+50	3	(growth reduction)	sen.	Franzaring et al. (2000)
					OTC	CF+	AA+50	3	none	sen.	Tonneijck et al. (2004)
<i>Plantago major</i>	Plantaginaceae	yes	no	p	OTC	CF(+)	AA+20	4	none		Bender et al. (2006a)
										coloured	Bergmann et al. (1999)
					OTC	CF	70	1		no	Lyons et al. (1999)
					controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
					controlled	CF	70	1	none	no	Reiling & Davison (1992)
					controlled		120 #	3		yes	Skelly et al. (1999)
	OTC	CF	NF		growth reduction		Fumagalli, et al. (2001)				
<i>Plantago maritima</i>	Plantaginaceae	yes	no	p	controlled	CF	70	1	none	no	Reiling & Davison (1992)
<i>Plantago media</i>	Plantaginaceae	yes	no	p	controlled	CF	70	1	none	no	Reiling & Davison (1992)
					OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
<i>Platystemon californica</i>	Papaveraceae	no	no	a	free-air	AA	2×AA	14		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Poa alpina viviparum</i>	Poaceae	yes	no	p	controlled	?	80	?	none	no	Mortensen & Nilsen (1992)
<i>Poa annua</i>	Poaceae	yes	no	a	controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
					OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
<i>Poa palustris</i>	Poaceae	yes	no	p	OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
<i>Poa pratensis</i>	Poaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF+	AA+50	3		no	Bender et al. (2002)
									none	yes	Bender et al. (2006b)
					OTC	CF	2×AA	3	none	yes	Bungener et al. (1999a,b)
	controlled	?	55	2	shoot reduction	yes	Mortensen (1992)				
<i>Poa trivialis</i>	Poaceae	yes	no	p	controlled	CF	70	1	none	no	Reiling & Davison (1992)
<i>Polygonum viviparum</i>	Polygonaceae	yes	no	p	controlled	?	80	?	growth reduction		Mortensen & Nilsen (1992)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Potentilla erecta</i>	Rosaceae	yes	no	p	soldardomes	CF	dyn.§	1	increase in shoot	spec.	Hayes et al. (2006)
					controlled	?	80	?	yes	Mortensen & Nilsen (1992)	
<i>Primula farinosa</i>	Primulaceae	yes	yes	p	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Prunella vulgaris</i>	Lamiaceae	yes	no	p	controlled	?	80	?	none	no	Mortensen & Nilsen (1992)
<i>Pulsatilla vulgaris</i>	Ranunculaceae	yes	no	p	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Ranunculus acris</i>	Ranunculaceae	yes	no	p	soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
					controlled	?	96	2	growth reduction		Mortensen (1993)
					soldardomes	AA-20	AA+70	7	(growth reduction)	sen.	Wyness et al. (2011)
<i>Ricinus communis</i>	Euphorbiaceae	no	no	a	controlled		120 #	3		yes	Skelly et al. (1999)
<i>Rhodiola rosea</i>	Crassulaceae	yes	yes	p	controlled	CF	70	1	none		Batty et al. (2001)
<i>Rubia peregrine</i>	Rubiaceae	no	no	p	controlled		120 #	3		yes	Skelly et al. (1999)
<i>Rubus chamaemorus</i>	Asteraceae	yes	yes	a	controlled	?	80	?		no	Mortensen & Nilsen (1992)
<i>Rudbeckia laciniata</i>	Asteraceae	neo.	no	p	OTC	CF+	2×AA	2	growth reduction	yes	Szantoi et al. (2009)
<i>Rumex sp.</i>	Polygonaceae			p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Rumex acetosa</i>	Polygonaceae	yes	no	p	GH	CF	80	1	none	no	Ashmore et al. (1996)
					OTC	CF	90	1	none	no	Batty et al. (2001)
					OTC	CF+	AA+50	3		sen.	Bender et al. (2002)
					OTC	CF(+)	AA+20	3	shoot reduction		Bender et al. (2006a)
					OTC	CF(+)	AA+20	4		sen.	Bergmann et al. (1999)
					OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
					soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
					controlled	?	60-80	1		yes	Manning & Godzik (2004)
					controlled	?	96	2	growth reduction		Mortensen (1993)
controlled	CF	70	1	none	yes	Reiling & Davison (1992)					
<i>Rumex acetosella</i>	Polygonaceae	yes	no	p	controlled	CF	70	1	growth reduction	yes	Reiling & Davison (1992)
<i>Rumex crispus</i>	Polygonaceae	yes	no	p	OTC	CF(+)	AA+20	3	none	coloured	Bender et al. (2006) A, Bergmann et al. (1999)
<i>Rumex obtusifolius</i>	Polygonaceae	yes	no	p	OTC	CF(+)	AA+20	4	shoot increase	sen.	Bender et al. (2006a) Bergmann et al. (1995), 1996)
					OTC	CF(+)	AA+20	4		coloured	Bergmann et al. (1999)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
					OTC	CF	2×AA	3	none	coloured	Bungener et al. (1999a,b)
					controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
					controlled		120 #	3		yes	Skelly et al. (1999)
					OTC	CF	AA	1		yes	VanderHeyden et al. (2001)
<i>Rumex pulcher</i>	Polygonaceae	arch.	no	p	controlled		120 #	3		yes	Skelly et al. (1999)
<i>Salvia columbariae</i>	Lamiaceae	no	no	a	free-air	AA	2×AA	15		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Salvia pratensis</i>	Lamiaceae	yes	(yes)	p	OTC	CF	2×AA	3	none	sen.	Bungener et al. (1999a,b)
<i>Sanguisorba minor</i>	Rosaceae	yes	no	p	OTC	CF	90	3	none		Ashmore et al. (1995)
					GH	CF	80	1	none	no	Ashmore et al. (1996)
<i>Saussurea alpina</i>	Asteraceae	yes	yes	p	controlled	?	96	2	increase at medium level		Mortensen (1993)
<i>Saxifraga cernua</i>	Saxifragaceae	no	no	p	controlled	?	80	?	none	no	Mortensen & Nilsen (1992)
<i>Saxifraga cespitosa</i>	Saxifragaceae	no	no	p	controlled	?	80	?	none	no	Mortensen & Nilsen (1992)
<i>Saxifraga stellaris</i>	Saxifragaceae	yes	no	p	soldardomes	CF	dyn.§	1	none	no	Hayes et al. (2006)
<i>Schismus barbatus</i>	Poaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Schizachyrium scoparium</i>	Poaceae	no	no	p	OTC	CF	2×AA	2	none		Powel et al. (2003)
					controlled	?	95	1	growth reduction		Volin et al. (1998)
<i>Scirpus cespitosus</i>	Cyperaceae	yes	no	p	soldardomes	CF	dyn.§	1	shoot reduction	sen.	Hayes et al. (2006)
<i>Scrophularia auriculata</i>	Scrophulariaceae	yes	yes	p	controlled	CF	70	1	growth reduction	no	Batty et al. (2001)
					controlled	CF	80	2	growth reduction		Batty et al. (2001)
<i>Sedum roseum</i>	Crassulaceae	no	no	p	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Senecio fluviatilis</i>	Asteraceae	yes	yes	p	soldardomes	CF	dyn.§	1	increase in shoot	no	Hayes et al. (2006)
<i>Senecio subalpinus</i>	Asteraceae	yes	no		controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Senecio vulgaris</i>	Asteraceae	yes	no	a	OTC	CF(+)	AA+20	3	foliage reduction (seed reduction)		Bender et al. (2006a)
					OTC	CF(+)	AA+20	3	(shoot and flower reduction)		Bergmann et al. (1996)
					OTC	CF(+)	AA+20	4		no	Bergmann et al. (1999)
					OTC	CF(+)	CF+70	2	(foliage reduction)	sen.	Bergmann et al. (1995)
					OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
					GH	CF	100	2	shoot reduction	yes	El-Khatib (2003)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Silene acaulis</i>	Caryophyllaceae	yes	no	p	controlled	?	80	?	growth reduction		Mortensen & Nilsen (1992)
<i>Silene dioica</i>	Caryophyllaceae	yes	no	p	OTC	CF	2×AA	3	shoot increase	no	Bungener et al. (1999a,b)
<i>Silene noctiflora</i>	Caryophyllaceae	arch.	(yes)	p	controlled	CF	70	1	none	no	Batty et al. (2001)
<i>Silene vulgaris</i>	Caryophyllaceae	yes	no	p	OTC	CF	1.5×AA	2	none	no	Pleijel & Danielsson (1997)
					controlled	?	70	1	hampered in flowering		Ernst et al. (1985)
					controlled	?	96	2	increase at medium level		Mortensen (1993)
<i>Silphium perfoliatum</i>	Asteraceae	no	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Sinapis arvensis</i>	Brassicaceae	arch.	no	a	OTC	CF, CF+	AA+20	4		no	Bergmann et al. (1999)
<i>Solanum nigrum</i>	Solanaceae	arch.	no	a	OTC	CF(+)	AA+20	3	foliage and shoot reduction (fruit reduction)		Bender et al. (2006) A, Bergmann et al. (1996)?
							AA+20	4		no	Bergmann et al. (1999)
							CF+70	2	none	no	Bergmann et al. (1995)
<i>Solidago albopilosa</i>	Asteraceae	no	no	p	?	0.5 x AA	2×AA	1	(growth reduction)	no	Mavity & Berrang (1994)
<i>Solidago virgaurea</i>	Asteraceae	yes	no	p	controlled	?	96	2	growth reduction		Mortensen (1993)
					controlled	?	80	?	none	yes	Mortensen & Nilsen (1992)
<i>Sonchus asper</i>	Asteraceae	yes	no	a	OTC	CF(+)	AA+20	3	(foliage and shoot reduction)		Bender et al. (2006a) Bergmann et al. (1996), (1995) spec. Bergmann et al. (1995), (1999)
<i>Sonchus oleraceus</i>	Asteraceae	yes	no	a	GH	CF	100	2	shoot reduction	yes	EI-Khatib (2003)
<i>Spartina alterniflora</i>	Poaceae	no	no	p	OTC	CF	80	1	growth reduction	yes	Taylor, M. D., et al. (2002)
<i>Stachys germanica</i>	Lamiaceae	yes	no	b	controlled	CF	70	1	total rgr reduction	yes	Batty et al. (2001)
<i>Stachys officinalis</i>	Lamiaceae	yes	no	p	controlled	?	60-80	1		yes	Manning & Godzik (2004)
<i>Stachys palustris</i>	Lamiaceae	yes	no	p	controlled	CF	70	1	growth reduction	no	Batty et al. (2001)
<i>Stellaria media</i>	Asteraceae	arch.	no	a	OTC	CF(+)	AA+20	3	none		Bender et al. (2006a), Bergmann et al. (1996)
<i>Stephanomeria exigua</i>	Asteraceae	no	no	p	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Streptanthella longirostris</i>	Brassicaceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
<i>Stylocline filaginea</i>	Asteraceae	no	no	a	OTC	CF	100	2		no	Thompson et al. (1984)
<i>Succisa pratensis</i>	Caprifoliaceae	yes	(yes)	p	OTC	CF	AA+50	3	none		Franzaring et al. (2000)
<i>Symphytum officinale</i>	Boraginaceae	yes	no	p	OTC	CF	90	1	shoot reduction	yes	Batty et al. (2001)
<i>Tanacetum vulgare</i>	Asteraceae	arch.	no	p	OTC	CF(+)	AA+20	3	none		Bender et al. (2006a), Bergmann et al. (1996) spec. Bergmann et al. (1999)
<i>Taraxacum croceum</i>	Asteraceae	no	no		controlled	?	96	2	none		Mortensen (1993)
<i>Taraxacum officinale</i>	Asteraceae	yes	no	p	OTC	CF	2×AA	3	none	spec.	Bungener et al. (1999a,b)
<i>Teucrium scorodonia</i>	Lamiaceae	yes	no	p	GH		90	2*		yes	Orendovici et al. (2003)
					controlled	CF	70	1	growth reduction	no	Reiling & Davison (1992)
<i>Thalictrum alpinum</i>	Ranunculaceae	no	no	p	controlled	?	80	2	none	no	Mortensen (1994)
<i>Thelypodium lasiophyllum</i>	Brassicaceae	no	no	a	free-air	AA	2×AA	16		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Thymus polytrichus</i> ¹¹	Lamiaceae	yes	no	p	soldardomes	CF	dyn.§	1	(shoot increase)	no	Hayes et al. (2006)
<i>Thysanocarpus curvipes</i>	Brassicaceae	no	no	a	free-air	AA	2×AA	17		no	Bytnerowicz et al. (1988)
					OTC	CF	100	2		no	Thompson et al. (1984)
<i>Tragopogon orientalis</i> ¹²	Asteraceae	yes	(yes)	p	OTC	CF	2×AA	3	none	spec.	Bungener et al. (1999a,b)
<i>Trifolium alexandrinum</i>	Fabaceae	neo	no	a	controlled		100	1		yes	Madkour & Laurence (2002)
<i>Trifolium angustifolium</i>	Fabaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
									growth reduction		Gimeno et al. (2004)
<i>Trifolium arvense</i>	Fabaceae	yes	no	a	OTC	CF(+)	AA+20	4	shoot reduction (increase in no. of inflorescences)		Bender et al. (2006a) Bergmann et al. (1996) spec. Bergmann et al. (1999)
<i>Trifolium cherleri</i>	Fabaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
									reduction		Gimeno et al. (2004)
<i>Trifolium dubium</i>	Fabaceae	yes	no	a	GH	CF	80	1	growth reduction	yes	Ashmore et al. (1996)
<i>Trifolium glomeratum</i>	Fabaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)

¹¹ = *T. praecox* subsp. *polytrichus*¹² = *T. pratensis* subsp. *orientalis*

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
									reduction		Gimeno et al. (2004)
<i>Trifolium hirtum</i>	Fabaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
<i>Trifolium pratense</i>	Fabaceae	yes	no	a/p	GH	CF	80	1	growth reduction	yes	Ashmore et al. (1996)
					OTC	CF	2×AA	3	growth reduction	spec.	Bungener et al. (1999a,b)
					controlled	?	55	2	shoot reduction	yes	Mortensen (1992)
					controlled	?	80	2	reduction	yes	Mortensen (1994)
					OTC	CF	AA	1		yes	Luthykrause, B., et al. (1989)
<i>Trifolium repens</i>	Fabaceae	yes	no	p	GH	CF	80	1	growth reduction	yes	Ashmore et al. (1996)
					OTC	CF	2×AA	3	growth reduction	spec.	Bungener et al. (1999a,b)
					OTC	CF	NF		growth reduction		Fumagalli, et al. (2001)
<i>Trifolium striatum</i>	Fabaceae	neo.	yes		OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
									growth reduction		Gimeno et al. (2004)
									shoot, flower and seed reduction		Sanz et al. (2007)
<i>Trifolium subterraneum</i>	Fabaceae	no	no	a	OTC	CF	AA+40	2		yes	Bermejo et al. (2003)
									growth reduction		Gimeno et al. (2004)
									root and shoot reduction	sen.	Sanz et al. (2005)
<i>Tripsacum dactyloides</i>	Poaceae	no	no	p	OTC	CF	2×AA	2	increased growth		Lin et al. (2004)
<i>Trisetum flavescens</i>	Poaceae	yes	no	p	OTC	CF	2×AA	3	none	yes	Bungener et al. (1999a,b)
<i>Typha latifolia</i>	Typhaceae	yes	no	p	controlled	CF	70	1		no	Batty et al. (2001)
<i>Urtica dioica</i>	Urticaceae	yes	no	p	OTC	CF(+)	AA+20	3	reduction in germination rate, (seed reduction)		Bender et al. (2006a) Bergmann et al. (1996)
					controlled	CF	70	1	growth reduction	no	Bergmann et al. (1999)
										no	Reiling & Davison (1992)
<i>Urtica urens</i>	Urticaceae	yes	no	a	OTC	CF(+)	AA+20	3	reduction in germination rate		Bender et al. (2006a)
<i>Valeriana officinalis</i>	Caprifoliaceae ¹³ ,	yes	no	p	controlled	CF	70	1	(growth reduction)	no	Batty et al. (2001)
					OTC	CF	90	1	shoot reduction, root reduction	yes	Batty et al. (2001)

¹³ Valerianaceae

species	family	native	end.	life h.	exposure	ref.	high ozone	no.	growth effect	injury	references
					controlled	CF	80	2	none		Batty et al. (2001)
<i>Verbascum lychnitis</i>	Scrophulariaceae	yes	no	b	controlled	CF	70	1	none	no	Batty et al. (2001)
					controlled	CF	80	2	none		Batty et al. (2001)
<i>Verbascum sinuatum</i>	Scrophulariaceae	neo.	no	(p)	controlled		120 #	3		yes	Skelly et al. (1999)
<i>Vernonia noveboracensis</i>	Asteraceae	no	no	p	GH		90	2*		yes	Orendovici et al. (2003)
<i>Veronica chamaedrys</i>	Plantaginaceae ¹⁴	yes	no	p	OTC	CF+	AA+50	3		no	Bender et al. (2002)
<i>Vicia cracca</i>	Fabaceae	yes	no	p	OTC	CF	90	1	none	yes	Batty et al. (2001)
<i>Vicia sativa</i>	Fabaceae	yes	no	a	GH	CF	80	1	(growth reduction)	yes	Ashmore et al. (1996)
<i>Viola arvensis</i>	Violaceae	arch.	no	a	OTC	CF(+)	CF+70	2	none	(sen.)	Bergmann et al. (1995)
<i>Viola lutea</i>	Violaceae	no	no	p	solardomes	CF	dyn.§	1	none	sen.	Hayes et al. (2006)
<i>Viola riviniana</i>	Violaceae	yes	no	p	controlled	CF	70	1	growth reduction	no	Batty et al. (2001)
<i>Vulpia myuros</i>	Poaceae	yes	no	a	OTC	CF	AA+40	2		no	Bermejo et al. (2003)
									none		Gimeno et al. (2004)

¹⁴ Scrophulariaceae

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