

**Review of resistance breeding programmes for diseases and insect pests in forest trees.**

<u>Status*</u>	<u>Genus</u>	<u>Species</u>	<u>Country</u>	<u>Pest type**</u>	<u>Common name</u>	<u>Pest Scientific name</u>	<u>Approach***</u>	<u>Contact(s)</u>	<u>E-mail</u>	<u>Website / Address</u>	<u>Literature Cited</u>
1	<i>Chamaecyparis</i>	<i>lawsoniana</i>	USA	D	Root rot	<i>Phytophthora lateralis</i> (root)	1	Richard Sniezko	rsniezko@fs.fed.us	<a href="http://www.fs.fed.us/r6/dorena">http://www.fs.fed.us/r6/dorena</a>	Sniezko <i>et al.</i> , 2000; Sniezko, 2004; Sniezko & Hansen, 2003; Sniezko <i>et al.</i> , 2006.
1	<i>Larix</i>	<i>occidentalis</i>	USA	D		<i>Meria laricis</i> ; <i>Hypodermella laricis</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	Rehfeldt, 1992
1	<i>Pinus</i>	<i>albicaulis</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	Kinloch, 1982; Hoff & Hagle, 1990; Mahalovich, Burr & Foushee, 2006
1	<i>Pinus</i>	<i>contorta</i>	USA	D	Western gall rust	<i>Endocronartium harknessii</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	Mahalovich, 1995
1	<i>Pinus</i>	<i>elliotti</i>	USA	D	Fusiform rust	<i>Cronartium quercuum</i>	1	Dudley Huber	dahuber@ufl.edu	<a href="http://www.sfrc.ufl.edu/CFGRP/ourweb.html">http://www.sfrc.ufl.edu/CFGRP/ourweb.html</a>	Lopez-Upton, White & Huber, 2000
1	<i>Pinus</i>	<i>monticola</i>	Canada	D	White pine blister rust	<i>Cronartium ribicola</i>	1	John King	John.King@gov.bc.ca	<a href="http://www.for.gov.bc.ca/hre/for/gen/forest/coastal/whitepine.htm">http://www.for.gov.bc.ca/hre/for/gen/forest/coastal/whitepine.htm</a>	Hunt, 2004; Hunt & Jensen, 2001
1	<i>Pinus</i>	<i>monticola</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Mary Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	Bingham <i>et al.</i> , 1969; Bingham, 1983; Goddard, McDonald & Steinhoff, 1985; Hoff, 1986; Hoff & McDonald, 1971; Hoff & McDonald, 1993
1	<i>Pinus</i>	<i>monticola</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Mark Rust	mrust@uidaho.edu	<a href="http://www.cnr.uidaho.edu/IE/TIC/">http://www.cnr.uidaho.edu/IE/TIC/</a>	Fins <i>et al.</i> 2002.
1	<i>Pinus</i>	<i>monticola</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Richard Sniezko	rsniezko@fs.fed.us	<a href="http://www.fs.fed.us/r6/dorena">http://www.fs.fed.us/r6/dorena</a>	Kinloch <i>et al.</i> , 1999; Sniezko <i>et al.</i> , 2004; Sniezko, Bower & Danielson, 2000
1	<i>Pinus</i>	<i>monticola</i>	Germany	D	White pine blister rust	<i>Cronartium ribicola</i>	2	Irmtraut Zaspel	zaspel@holz.uni-hamburg.de		
1	<i>Pinus</i>	<i>ponderosa var ponderosa</i>	USA	D	Western gall rust	<i>Endocronartium harknessii</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	Mahalovich, 2003
1	<i>Pinus</i>	<i>radiata</i>	New Zealand	D	Needle blight	<i>Dothistroma pini</i>	1	Sue & Mike Carson , Heidi Dungey	Sue.Carson@forest-genetics.com, Heidi.Dungey@ensisjv.com	<a href="http://www.proseed.co.nz/radiata/radiata.htm">http://www.proseed.co.nz/radiata/radiata.htm</a> , <a href="http://www.forest-genetics.com/index.htm">http://www.forest-genetics.com/index.htm</a> , <a href="http://www.scionresearch.com/ensis+forest+biosecurity+and+protection.aspx">http://www.scionresearch.com/ensis+forest+biosecurity+and+protection.aspx</a>	Carson, 1990; Carson & Carson, 1991

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1	<i>Pinus</i>	<i>taeda</i>	USA	D	Fusiform rust	<i>Cronartium quercuum</i>	1	E. Kuhlman, Carol Young, Harry Powers, Bob Schmidt, Bailin Li, Dudley Huber, Tom Byram, Steve McKeand	bailian@unity.ncsu.edu, dahuber@ufl.edu, tbyram@tfs.tamu.edu, Steve_McKeand@ncsu.edu	http://digital.library.okstate.edu/Forestry/sf27p201.pdf , http://www.sfrc.ufl.edu/CFGRP/ourweb.html ,  http://texasforests.tamu.edu/shared/article.asp?DocumentID=594&mc=forest , http://natural-resources.ncsu.edu/for/research/tip/tip.html	Young, 2003; Kuhlman, 1997; Isik, Li & Frampton, 2003; Lambeth, 2000; Sierra-Lucero <i>et al.</i> , 2002
1	<i>Populus</i>	spp	USA	D	Leaf rust; Shoot blight; Leaf spot	<i>Melampsora occidentalis</i> ; <i>M. medusae</i> ; <i>M. columbiana</i> ; <i>Venturia populina</i> ; <i>Septoria populicola</i>	1	Brian Stanton	bstanton@greenwoodresources.com	http://www.greenwoodresources.com/	Newcombe & van Oosten, 1997; Newcombe <i>et al.</i> , 1994; Newcombe & Bradshaw, Jr., 1996; Riemenschneider <i>et al.</i> , 2001
1	<i>Populus</i>	spp	USA	I	Poplar & willow borer	<i>Cryptorhynchus lapathi</i>	1	Brian Stanton	bstanton@greenwoodresources.com	http://www.greenwoodresources.com/	Johnson & Johnson, 2003
1	<i>Populus</i>	<i>nigra</i>	China	I	Asian longhorned beetle	<i>Anoplophora glabripennis</i>	13	Yin Weilun, XiaoHua Su, JianJun Hu, Zhang Zhiyi, Meng Zhu Lu	hujj@forestry.ac.cn; suhx@rif.forestry.ac.cn; zhangzy@bjfu.edu.cn; lumz@mail.forestry.ac.cn	Chinese Forestry Academy of Sciences	Weilun & Wen, 2005; Hu <i>et al.</i> , 2001; Tian <i>et al.</i> , 1993; Wang <i>et al.</i> , 1996; Wang, Han, & Hu, 2004
1	<i>Populus</i>	<i>alba x davidiana</i> ; <i>simonii x tomentosa</i>	China	I	Beetles		3	MinSheng Yang	deu100@hotmail.com	Agricultural University of Hebei	Zheng <i>et al.</i> , 2000; Tian <i>et al.</i> , 2000; Yang <i>et al.</i> , 2003; Liu <i>et al.</i> , 2004; Liu <i>et al.</i> , 2004
1	<i>Populus</i>	<i>trichocarpa x deltoides</i> ; <i>nigra x deltoides</i>	Europe	I & D	Leaf rust	<i>Melampsora larici-populina</i>	12	International Poplar Commission & FAO; Marc Villar; Marijke Steenackers	marc.villar@orleans.inra.fr; Marijke.STEENACKERS@inbo.be	http://www.efor.ucl.ac.be/ipc/ The Secretary International Poplar Commission, FAO Viale della Terme de Caracalla I-00100 Rome, Italy	van Slycken, Michiels & Steenackers, 2002; Dowkiw & Bastien, 2004; Dowkiw <i>et al.</i> , 2003; Jorge <i>et al.</i> , 2005
1	<i>Populus</i>	spp, hybrids	India	I & D			1	Dev Khurana	khuranasolan@yahoo.com		
1	<i>Populus</i>	ssp, hybrids	Argentina	D	Leaf rust	<i>Melampsora medusae</i>	1	Silvia Cortizo	scortizo@correo.inta.gov.ar	Instituto Nacional de Tecnología Agropecuaria. Estación Experimental Delta del Paraná. CC: 14. 2804 Campana. Provincia de Buenos Aires. Argentina. Http://www.inta.gov.ar	Cortizo <i>et al.</i> , 2006; Cortizo, 2005a; Cortizo, 2005b; Cortizo, 2003; Cortizo & Romero, 2000

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1	<i>Prunus</i>	<i>avium</i>	Spain	D	Cherry leaf spot	<i>Blumeriella jaapii</i> (= <i>Phloesporella padi</i> )	1	Raquel Díaz	rdiaz.cifal@siam-cma.org	Centro de Investigaciones Ambientales de Lourizán - Lourizán Environmental Research Institute (CINAM Lourizán). Cra. de Marín, km. 4. 36080 Pontevedra (Spain)	Díaz, Zas & Fernández-López, 2007; Santi <i>et al.</i> , 1998
1	<i>Pseudotsuga</i>	<i>menziesii</i>	USA	D	Needle cast	<i>Phaeocryptopus gaeumannii</i>	1	Keith Jawarickrama	keith.jayawickrama@oregonstate.edu		Temel, Johnson & Adams, 2005; Johnson, 2002; Temel, Johnson & Stone, 2004
1	<i>Salix</i>	spp	USA	I & D			1	Tim Volk	tavolk@mailbox.syr.edu	<a href="http://www.nrbp.org/papers/021.pdf">http://www.nrbp.org/papers/021.pdf</a> , <a href="http://www.esf.edu/willow/PUBLICATIONS/handbook/handbook.htm">http://www.esf.edu/willow/PUBLICATIONS/handbook/handbook.htm</a>	Dawson, McCracken & Carlisle, 2005
1	<i>Salix</i>	<i>viminalis</i> , <i>dasyclados</i> , spp	Sweden	I & D	Leaf rust		1	Stig Larsson			Larsson, 2001a; Larsson, 2001b
2	<i>Castanea</i>	<i>dentata</i>	USA	D	Chestnut blight	<i>Cryphonectria parasitica</i>	123	Fred Hebard, Paul Sisco, Gary Griffin, William Powell, William MacDonald, Kim Steiner, John Carlson, Sandy Anagnostakis	Fred@acf.org, Paul@acf.org, gagriffi@ut.edu, wapowell@esf.edu, macd@wvu.edu, Kcs@psu.edu, jec16@psu.edu, Sandra.Anagnostakis@po.state.ct.us	<a href="http://chestnut.cas.psu.edu/nps.htm">http://chestnut.cas.psu.edu/nps.htm</a> , <a href="http://www.acf.org/About.htm">http://www.acf.org/About.htm</a> , <a href="http://www.genome.clemson.edu/projects/fagaceae/">http://www.genome.clemson.edu/projects/fagaceae/</a>	Carlson & Steiner, 2005; Sisco <i>et al.</i> , 2005; Griffin <i>et al.</i> , 1983; Hebard, 2004
2	<i>Castanea</i>	<i>dentata</i>	USA	D	Chestnut blight	<i>Cryphonectria parasitica</i> (Chestnut blight)	3	William A. Powell, Charles A. Maynard, Scott Merkle	wapowell@esf.edu, cmaynard@syr.edu, smerkle@uga.edu	<a href="http://www.esf.edu/chestnut/">http://www.esf.edu/chestnut/</a>	Polin <i>et al.</i> , 2006; Welch <i>et al.</i> , 2007; Powell <i>et al.</i> , 2006
2	<i>Fagus</i>	<i>grandifolia</i>	USA	D	Beech bark disease	<i>Cryptococcus fagisuga</i> ; <i>Nectria</i> spp	12	Jennifer Koch	jkoch@fs.fed.us	Northern Research Station, Forest Service, 359 Main Rd. Delaware, OH 43015	Koch & Carey, 2004; Koch & Carey, 2005
2	<i>Picea</i>	<i>glauca</i>	Canada	I	White pine weevil	<i>Pissodes strobi</i>	1	John King	John.King@gems7.gov.bc.ca; Ralfaro@pfc.cfs.nrcan.gc.ca	<a href="http://www.for.gov.bc.ca/hre/for/organ/coastal/sitkaspruce.htm">http://www.for.gov.bc.ca/hre/for/organ/coastal/sitkaspruce.htm</a> British Columbia Forest Service, Research Branch, 3rd Floor, 712 Yates St, Victoria, BC V8W 9C2, Canada. <a href="http://cfs.nrcan.gc.ca/subsite/weevil/resistance">http://cfs.nrcan.gc.ca/subsite/weevil/resistance</a>	King <i>et al.</i> , 1997; King & Alfaro, 2004
2	<i>Picea</i>	<i>sitchensis</i>	Denmark	I	Green spruce aphid	<i>Elatobium abietinum</i>	1	Hans Rouland		KVL, Denmark	Harding, Rouland & Wellendorf, 2003

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2	<i>Picea</i>	<i>sitchensis</i>	Canada	I	White pine weevil	<i>Pissodes strobi</i>	1	John King	John.King@gov.bc.ca		Alfaro <i>et al.</i> , 2000
2	<i>Pinus</i>	<i>albicaulis</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Richard Sniezko	rsniezko@fs.fed.us	<a href="http://www.fs.fed.us/r6/dorena">www.fs.fed.us/r6/dorena</a>	Sniezko & Zambino, 2005; Sniezko & Kegley, 2003; Sniezko & Kegley, 2003
2	<i>Pinus</i>	<i>lambertiana</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Joan Dunlap	jdunlap@fs.fed.us		Harkins <i>et al.</i> , 1998; Kitzmiller, 1976; Kinloch, 1982; Kinloch, 2003; Kinloch & Dupper, 2002; Kinloch, Davis & Burton, 2004b
2	<i>Pinus</i>	<i>radiata</i>	New Zealand	D	Tip blight	<i>Diplodia pinea</i> , ( <i>Sphaeropsis sapinea</i> )	1	Rowland Burdon		<a href="http://www.scionresearch.com/ensis+forest+biosecurity+and+protection.aspx">http://www.scionresearch.com/ensis+forest+biosecurity+and+protection.aspx</a>	Burdon, Curry & Chou, 1982
2	<i>Pinus</i>	<i>strobiformis</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Richard Sniezko	rsniezko@fs.fed.us	<a href="http://www.fs.fed.us/r6/dorena">www.fs.fed.us/r6/dorena</a>	Sniezko <i>et al.</i> , 2006.
2	<i>Populus</i>	<i>deltooides x nigra</i>	USA	D	Leaf spot	<i>Septoria musiva</i>	3	William A. Powell, Charles A. Maynard	wapowell@esf.edu, cmaynard@syr.edu	<a href="http://www.esf.edu/efb/powell/default.htm">http://www.esf.edu/efb/powell/default.htm</a>	Liang <i>et al.</i> , 2002; Liang <i>et al.</i> , 2001
2	<i>Populus</i>	spp	Russia	I & D			1	Anatoly Tsarev	tsarev@psu.karelia.ru		
2	<i>Populus</i>	spp	Chile	I & D			1	Francisco Zamudio	fzamudio@utalca.cl		
2	<i>Populus</i>	ssp, hybrids	Korea	I & D			1	Yeong Bon Koo	ybkoo@foa.go.kr	<a href="http://www.kfri.go.kr">http://www.kfri.go.kr</a>	Koo <i>et al.</i> , 2006
2	<i>Ulmus</i>	<i>americana</i>	USA	D	Dutch elm disease	<i>Ophiostoma novo-ulmi</i>	3	William A. Powell, Charles A. Maynard	wapowell@esf.edu, cmaynard@syr.edu	<a href="http://www.esf.edu/efb/powell/default.htm">http://www.esf.edu/efb/powell/default.htm</a>	Newhouse <i>et al.</i> , 2007; Newhouse <i>et al.</i> , 2006
2	<i>Ulmus</i>	hybrids	USA	D	Dutch elm disease	<i>Ophiostoma ulmi</i>	1	Ray Guries	rpguries@wisc.edu	<a href="http://www.usna.usda.gov/Neintro/Patriot1.html">http://www.usna.usda.gov/Neintro/Patriot1.html</a>	Smalley & Guries, 2000; Guries & Smalley, 2000; Smalley & Guries, 1993; Townsend & Douglass, 2004; Townsend, 2000; Townsend & Douglass, 2001; Townsend & Santamour, 1993; Townsend, Bentz & Douglass, 2005
3	<i>Abies</i>	<i>nordmanniana</i>	Denmark	I	Silver fir woolly aphid	<i>Dreyfusia nordmannianae</i>	1	Ulrik Nielsen		KVL, Denmark	Nielsen, Kirkeby-Thomsen & Roulund, 2002

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3	<i>Acer</i>	<i>rubrum</i>	USA	I	Potato leaf hopper	<i>Empoasca fabae</i>	1				Bentz & Townsend, 1999; Townsend, 1989; Townsend & Douglass, 1998; Townsend & McIntosh, 1993;
3	<i>Betula</i>	<i>pendula</i>	Finland	D			3				Pasonen <i>et al.</i> , 2004
3	<i>Betula</i>	spp	USA	I	Bronze birch borer	<i>Agrilus anxius</i>	1			US National Arboretum, UD Dept. of Ag, Washington, DC 20002, USA	Santamour, 1999
3	<i>Castanea</i>	<i>sativa</i>	Italy	D	Ink disease	<i>Phytophthora cambivora</i>	12				Abreu <i>et al.</i> , 1999
2	<i>Casuarina</i>	<i>equisetifolia</i> , <i>junghuhniana</i> , hybrid ( <i>equisetifolia</i> x <i>junghuhniana</i> )	India	D	Blister blight	<i>Subramanianospo ra vesiculosa</i>	1	C. Narayanan	narayanan.chaendaekattu@gmail.com	Dr. C. Narayanan, Tropical Forest Research Institute, PO-RFRC, Mandla Road, Jabalpur 482021, India	Narayanan, Sasidharan & Sampath Kumar, 1998; Narayanan, 2000; Narayanan, Sharma & Minter, 2003
3	<i>Cunninghamia</i>	<i>lanceolata</i>	China	I & D			1	XT Yu		Fujian College of Forestry, Nanping 353001, China	Yu, 2000; Zhou & Ma, 2000
3	<i>Cupressus</i>	<i>lusitanica</i>	Kenya	I	Aphid	<i>Cinara cupressi</i>	1			Dept of Forestry, Moi University, PO Box 1125, Eldoret, Kenya	Kamunya <i>et al.</i> , 1999
3	<i>Cupressus</i>	<i>macrocarpa</i>	New Zealand	D	Canker	<i>Seiridium unicorne</i>	1	C.B. Low		SCION, Rotorua, New Zealand	Gea & Low, 1997
3	<i>Eucalyptus</i>	<i>marginata</i>	Australia	D	Root rot	<i>Phytophthora cinnimomi</i>	1	M. Stukely			Stukely <i>et al.</i> , 2001
3	<i>Eucalyptus</i>	spp	Australia	I	Beetles	<i>Anoplognathus spp</i>	12				Shepherd, 1998; Sheperd, Chaparro & Teasdale, 2000
3	<i>Juglans</i>	<i>cinerea</i>	USA	D	Butternut canker	<i>Sirococcus clavignenti-juglandacearum</i>	1	Scott Schlarbaum	tenntip@utk.edu		
3	<i>Larix</i>	<i>decidua var. polonica</i>	Poland	D	Larch canker	<i>Lachnelluna willkommii</i>	1	Matras, J	matrasj@ibles.waw.pl	Instytut Badawczy Lesnictwa, Zakad Genetyki I Fizjologii Drzew Lesnych, ul. Bitwy Warszawskiej 1920 R nr 3, 00-973 Warszawa, Poland	Matras, 2001
3	<i>Larix</i>	<i>occidentalis</i>	USA	D	Honey mushroom	<i>Armillaria ostoyae</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	http://forest.moscowsl.wsu.edu/people/mahalovich.html	Hoff & McDonald, 1994
3	<i>Picea</i>	<i>abies</i>	Canada	I	White pine weevil	<i>Pissodes strobi</i>	2	R. Lavallee			Larochelle <i>et al.</i> , 1993
3	<i>Picea</i>	<i>abies</i>	Sweden	D	Root rot	<i>Heterobasidion annosum</i>	1	Hubert Wellendorf	HWE@life.ku.dk		Karlsson & Swedjemark, 2006; Swedjemark, 1995; Swedjemark & Karlsson, 2003

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3	<i>Picea</i>	<i>abies</i>	Denmark	D	Root rot	<i>Heterobasidion annosum</i>	1	Hubert Wellendorf	HWE@life.ku.dk		Wellendorf & Thomsen, 2007
3	<i>Pinus</i>	<i>aristata</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Richard Snieszko; Anna Schoettle	rsniezko@fs.fed.us ; aschoettle@fs.fed.us	http://www.fs.fed.us/r6/dorena/ ; http://www.fs.fed.us/rm/highlevel/evationwhitepines/	
3	<i>Pinus</i>	<i>contorta</i>	Canada	D	Western gall rust, Stalactiform blister rust, Needle cast, Sequoia pitch moth	<i>Endocronartium, Cronartium, Lophodermella</i>	1				Wu & Ying, 1997
3	<i>Pinus</i>	<i>contorta</i>	USA	D	Needle cast	<i>Lophodermium sp</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	http://forest.moscowsl.wsu.edu/people/mahalovich.html	Hunt, 1981; Hunt, Ying & Ashbee, 1987; Rehfeldt, 1987
3	<i>Pinus</i>	<i>contorta</i>	USA	I	Terminal weevil	<i>Pissodes terminalis</i>	2	Mary Frances Mahalovich	mmahalovich@fs.fed.us	http://forest.moscowsl.wsu.edu/people/mahalovich.html	
3	<i>Pinus</i>	<i>contorta</i>	Canada	I	Mountain pine beetle		1	Alvin Yanchuk	<a href="mailto:Alvin.Yanchuk@gov.bc.ca">Alvin.Yanchuk@gov.bc.ca</a>		Yanchuk, Wallin & Murphy, 2007
3	<i>Pinus</i>	<i>contorta var bolanderi</i>	New Zealand	M	Possum		1			SCION (FRI), Rotorua, New Zealand	Miller & Ecroyd, 1987
3	<i>Pinus</i>	<i>elliotti</i>	China	D	Tip blight	<i>Diplodia pinea, Lecanosticta acicola</i>	2			Forest Genetics & Gene Engineering Lab, Nanjing Forestry University, Nanjing 210037, china; Forestry Research Institute of Jiangsu, 211153, China	Yi <i>et al.</i> , 2000; Wang <i>et al.</i> , 1998
3	<i>Pinus</i>	<i>flexilis</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Richard Snieszko; Anna Schoettle	rsniezko@fs.fed.us ; aschoettle@fs.fed.us	http://www.fs.fed.us/r6/dorena/ ; http://www.fs.fed.us/rm/highlevel/evationwhitepines/	
3	<i>Pinus</i>	<i>monticola</i>	USA	D	Needle blight	<i>Lecanosticta</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	http://forest.moscowsl.wsu.edu/people/mahalovich.html	Hoff & McDonald, 1978
3	<i>Pinus</i>	<i>nigra</i>	USA	D	Tip blight	<i>Sphaeropsis sapinea</i>	1	Dan Houston		http://www.ohiodnr.com/forestry/Health/PNIGRAArticle97.html	Houston & McClenahan, 2005
3	<i>Pinus</i>	<i>nigra</i>	New Zealand	D		<i>Dothistroma</i>	1				Wilcox & Miller, 1975
3	<i>Pinus</i>	<i>ponderosa var ponderosa</i>	USA	D	Mistletoe	<i>Arceuthobium sp</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	http://forest.moscowsl.wsu.edu/people/mahalovich.html	Roth, 1974; Scharpf & Roth, 1992
3	<i>Pinus</i>	<i>ponderosa var ponderosa</i>	USA	D	Needle cast	<i>Lophodermium sp</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	http://forest.moscowsl.wsu.edu/people/mahalovich.html	Hoff, 1988b
3	<i>Pinus</i>	<i>ponderosa var ponderosa</i>	USA	I	Gouty pitch midge	<i>Cecidomyia piniinopis</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	http://forest.moscowsl.wsu.edu/people/mahalovich.html	Hoff, 1989; Hoff, 1988a

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3	<i>Pinus</i>	<i>ponderosa</i> var <i>ponderosa</i>	USA	I	Tip moth	<i>Rhyacionia</i> sp	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	Kegley, Stipe & Hepner, 1994
3	<i>Pinus</i>	<i>ponderosa</i> var <i>ponderosa</i>	New Zealand	D	Needle & tip blight	<i>Dothistroma</i> / <i>Diplodia</i>	1	Rowland Burdon	Rowland.Burdon@ensisjv.com		Burdon & Low, 1991
3	<i>Pinus</i>	<i>radiata</i>	New Zealand	D	Tip blight	<i>Sphaeropsis sapinea</i>	1	M.A. Dick		<a href="http://www.fhrc.org.nz/reports/report_details.asp?Report_ID=20">http://www.fhrc.org.nz/reports/report_details.asp?Report_ID=20</a>	
3	<i>Pinus</i>	<i>radiata</i>	Spain	D	Tip blight	<i>Diplodea pinea</i>	1			ETSI Agrarias, Universidad de Valladolid, 34071 Palencia, Spain	Arregui <i>et al.</i> , 1999
3	<i>Pinus</i>	<i>radiata</i>	New Zealand, USA	D	Pitch canker	<i>Fusarium circinatum</i>	1	Mike Carson	Mike.Carson@forest-genetics.com	<a href="http://www.forest-genetics.com/index.htm">http://www.forest-genetics.com/index.htm</a>	Devey, Matheson, & Carson, 2001; Bonello, Gordon & Storer, 2001
3	<i>Pinus</i>	<i>strobus</i>	USA	I	White pine weevil	<i>Pissodes strobi</i>	1				Wilkinson, 1983
3	<i>Pinus</i>	<i>strobus</i>	Canada	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Pengxin Lu	pengxin.lu@mnr.gov.on.ca	<a href="http://ofri.mnr.gov.on.ca/ofriresearch.cfm#genetics">http://ofri.mnr.gov.on.ca/ofriresearch.cfm#genetics</a>	Lu <i>et al.</i> , 2005
3	<i>Pinus</i>	<i>taeda</i>	China	D			1			Longyan Forestry Institute of Fujian Province, Longyan 364000, China	Zhao, 2000
3	<i>Pinus</i>	<i>strobus</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Andrew David	adavid@umn.edu	<a href="http://www.cnr.umn.edu/FR/centers/#Tree%20Improvement%20Cooperative">http://www.cnr.umn.edu/FR/centers/#Tree%20Improvement%20Cooperative</a>	Jurgens <i>et al.</i> , 2003; Smith <i>et al.</i> , 2005
3	<i>Pistacia</i>	<i>vera</i>	USA	D	Leaf spot	<i>Alternaria alternata</i>	1				Chao, Parfitt & Michailides, 2001
3	<i>Populus</i>	<i>nigra</i>	China	I			3				Hu <i>et al.</i> , 1999
3	<i>Populus</i>	<i>nigra</i>	China	I			3				Sala <i>et al.</i> , 2000
3	<i>Populus</i>	spp	France	I			3				European Commission, n.d.
3	<i>Populus</i>	spp	USA	D			3				Information Systems for Biotechnology (ISB), n.d.
3	<i>Populus</i>	spp	USA	I		<i>Coleoptera</i>	3				
3	<i>Populus</i>	spp	USA	I & D			1	Gerald Tuskan	gtk@ornl.gov		Riemenschneider <i>et al.</i> , 2001
3	<i>Populus</i>	spp	USA	I		<i>Lepidoptera: Lasiocampidae, Lepidoptera: Lymantriidae</i>	3				Kleiner <i>et al.</i> , 1995
3	<i>Populus</i>	spp	USA	I	Cottonwood leaf beetle	<i>Chrysomela scripta</i>	2				Augustin, Wagner & Clancy, 1994
3	<i>Populus</i>	spp	Chile	I	Aphid	<i>Chaitophorus leucomelas</i>	1				Ramirez <i>et al.</i> , 2004
3	<i>Populus</i>	<i>tomentosa</i>	China	I & D			1			College of Forest Resources & Environment, Beijing Forestry University, 100083, China	Li <i>et al.</i> , 1999
3	<i>Populus</i>	<i>trichocarpa</i>	USA	I & D			1				Thielges <i>et al.</i> , 1977

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3	<i>Prunus</i>	<i>avium</i>	France	D	Anthraco-nose	<i>Phloesporella padi</i>	1			Institut National de la Recherche Agronomique, Station d'Amelioration des Plantes, Domaine de la Motte, BP 29, F-35650 Le Rheu, France.	Muranty <i>et al.</i> , 1998
3	<i>Pseudotsuga</i>	<i>menziesii</i>	USA	D	Needle cast	<i>Rhabdo-cline sp</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	Hoff, 1987; Stephan, 1973.
3	<i>Pseudotsuga</i>	<i>menziesii</i>	USA	I	Western spruce budworm	<i>Choristoneura occidentalis</i>	1	Mary Frances Mahalovich	mmahalovich@fs.fed.us	<a href="http://forest.moscowsl.wsu.edu/people/mahalovich.html">http://forest.moscowsl.wsu.edu/people/mahalovich.html</a>	McDonald, 1985
3	<i>Salix</i>	<i>eriocephala x sericea</i>	USA	I	Aphids; Mites	<i>Chaitophorus / Aculops tetanothrix</i>	12				Czesak <i>et al.</i> , 2004
3	<i>Ulmus</i>	<i>pumila</i>	Italy	D	Dutch elm disease	<i>Ophiostoma ulmi</i>	1	A Santini	a.santini@ipp.cnr.it	Istituto per la Protezione delle Piante, CNR, Via Madonna del Piano, 50019 Sesto f.no, Italy	Santini <i>et al.</i> , 2004
4	<i>Abies</i>	<i>alba</i>	Denmark	I	Silver fir woolly aphid	<i>Dreyfusia (Adelges) nordmanniana-eckst.</i>	1				Beier-Petersen, Esbjerg & Soegaard, 1974
4	<i>Abies</i>	<i>fraseri</i>	USA	D	Root rot	<i>Phytophthora cinnamomi</i>	1	John Frampton		<a href="http://digital.library.okstate.edu/Forestry/sf27p072.pdf">http://digital.library.okstate.edu/Forestry/sf27p072.pdf</a>	Potter & Frampton, 2003
4	<i>Abies</i>	<i>sachalinensis</i>	Japan	D			1			Hokkaido Regional Breeding Office, Forest Tree Breeding Center, 561, Midorimachi, Bunkyo-dai, Ebetsu, Hokkaido 069-0836, Japan	Koono & Tando, 2000
4	<i>Acacia</i>	<i>koa</i>	USA	D	Wilt	<i>Fusarium oxysporum</i>	1	Nick Dudley, Richard Sniezko, Jim Brewbaker	rsniezko@fs.fed.us	<a href="http://www.agroforestry.net/tti/Acacia-koa.pdf">http://www.agroforestry.net/tti/Acacia-koa.pdf</a>	Shi & Brewbaker, 2004
4	<i>Betula</i>	<i>pendula</i>	Finland	I	Fly	<i>Phytobia</i>	1	Veiko Koski; Matti Rousi	vekoski@saunalahti.fi; Matti.Rousi@metla.fi		Ylioja, Schulman & Rousi, 1996; Koski & Rousi, 2005; Ylioja <i>et al.</i> , 2002; Ylioja <i>et al.</i> , 2000
4	<i>Betula</i>	<i>pendula</i>	Finland	D	Leaf rust	<i>Melampsoridium</i>	1	Matti Rousi	Matti.Rousi@metla.fi		Poteri & Rousi, 1996; Saikkonen, Helander & Rousi, 2003

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4	<i>Betula</i>	<i>pendula</i>	Finland	M	Moose; Hare; Vole	<i>Alces alces</i> ; <i>Lepus timidus</i>	1	Matti Rousi	Matti.Rousi@metla.fi		Rousi <i>et al.</i> , 1997; Jia <i>et al.</i> , 1997; Rousi, 1997; Laitinen, Rousi & Tahvanainen, 2002; Pusenius <i>et al.</i> , 2002; Prittinen <i>et al.</i> , 2003; Prittinen <i>et al.</i> , 2006
4	<i>Betula</i>	<i>platyphylla</i>	China	I			3				Zhan Yaguang <i>et al.</i> , 2001; Zhan <i>et al.</i> , 2003
4	<i>Betula</i>	spp	USA	I		<i>Hamameliste spinosus</i>	1				Johnson <i>et al.</i> , 2001
4	<i>Betula</i>	spp	USA	I	Bronze birch borer	<i>Agrilus anxius</i>	1				Johnson <i>et al.</i> , 2001; Miller <i>et al.</i> , 1991
4	<i>Betula</i>	spp	USA	I		<i>Popillia japonica</i>	1				Johnson <i>et al.</i> , 2001; Ranney & Walgenbach, 1992
4	<i>Betula</i>	spp. & hybrids	Japan	M	Hare; Vole	<i>Lepus timidus ainu</i> / <i>Clethrionomys rufocanus bedfordiae</i>	1	Takayoshi Takeda	<a href="mailto:takayoshi-takeda@oijpaper.co.jp">takayoshi-takeda@oijpaper.co.jp</a>	Forest Museum, Oji Paper Co., Ltd., Yuchi-90, Kuriyama-cho, Yubari-gun, Hokkaido, 069-1508 Japan.	Chiba & Nagata, 1968
4	<i>Castanea</i>	<i>henryi</i>	China	I	Gall wasp	<i>Dryocosmus kuriphilus</i>	1			Forestry College, Fujian Agriculture & Forestry Univ., Nanping 353001, China	Wu <i>et al.</i> , 2003
4	<i>Castanea</i>	<i>sativa</i>	Portugal	D	Root rot	<i>Phytophthora cinnamomi</i>	1				Carneiro, 1997
4	<i>Cedrela</i>	<i>odorata</i>	Spain	I	Mahogany shoot borer	<i>Hypsipyla grandella</i>	1				Marquetti, 1990
4	<i>Chamaecyparis</i>	<i>lateralis</i>	USA	D	Root rot	<i>Phytophthora lateralis</i>	1				Snieszko & Hansen, 2001
4	<i>Chamaecyparis</i>	<i>obtusa</i>	Japan	D	Seiridium canker	<i>Seiridium unicorne</i>	1				Kato, 1996
4	<i>Cornus</i>	spp	USA	D			1	RJ Sauve	rsaue@tnstate.edu	Nursery Crop Research Station, Tennessee State University, Institute for Agriculture & Env. Research, 472 Cadillac Lane, McMinnville, TN 37110, USA	Mmbaga & Sauve, 2004
4	<i>Cryptomeria</i>	<i>japonica</i>	Japan	I	Sugi bark borer	<i>Semanotus japonicus</i> (Coleoptera: Cerambycidae)	1				Kato & Taniguchi, 2003

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4	<i>Cryptomeria</i>	<i>japonica</i>	Japan	I	Sugi bark midges	<i>Resseliella odai</i>	1			Kyushu Regional Breeding Office, Forest Tree Breeding Center, 2320-5, Suya, Nishigoshi, Kumamoto 861-1102, Japan	Fujimoto <i>et al.</i> , 1983; Sasaki <i>et al.</i> , 2003
4	<i>Cryptomeria</i>	<i>japonica</i>	Japan	I	Sugi bark borer	<i>Semanotus japonicus</i>	1			Kansai Regional Breeding Office, Forest Tree breeding Center, 1043, Uestukinaka, Shoo, Kastuta, Okayama 709-4335, Japan	Kato & Kawamura, 1993; Ueki, 2004
4	<i>Cryptomeria</i>	<i>japonica</i>	Japan	I	Sugi bark borer	<i>Semanotus japonicus</i>	2	K. Nishiyama	kazu1218@affrc.go.jp	Kansai Regional Breeding Office, Forest Tree breeding Center, 1043, Uestukinaka, Shoo, Kastuta, Okayama 709-4335, Japan	Nishiyama, Watanabe & Kubota, 2002
4	<i>Cupressus</i>	<i>sempervirens</i>	Italy	D	Canker	<i>Seridium cardinale</i>	1				Santini, Camussi & Raddi, 1997
4	<i>Dalbergia</i>	<i>sissoo</i>	Nepal	D	Dieback		1				Dahkal <i>et al.</i> , 2004
4	<i>Eucalyptus</i>	<i>camaldulensis</i>	Australia	I			1				Floyd & Goldie, 1997
4	<i>Eucalyptus</i>	<i>camaldulensis</i>	Australia	I			3				Harcourt <i>et al.</i> , 2000
4	<i>Eucalyptus</i>	<i>europlylla</i>	China	D		<i>Pseudomonas solanaceanum</i>	3				Shao <i>et al.</i> , 2002
4	<i>Eucalyptus</i>	<i>globulus</i>	Australia	M	Common brushtail possum; Red-bellied pademelon	<i>Trichosurus vulpecula</i> ; <i>Thylogale billardierii</i>	1				O'Reilly-Wapstra, McArthur & Potts, 2002
4	<i>Eucalyptus</i>	<i>globulus</i>	Australia	I	Shoot-feeding weevils	<i>Mylorhinus</i> spp.	1				Jones & Potts, 2000
4	<i>Eucalyptus</i>	<i>globulus</i>	Australia	I	Autumn gum moth	<i>Mnesempala privata</i>	1				Jones <i>et al.</i> , 2002
4	<i>Eucalyptus</i>	<i>globulus</i>	Australia	I	Beetles; Leaf blister sawfly; Autumn gum moth	<i>Anoplognathus</i> spp.; <i>Phylacteophaga froggatti</i> ; <i>Mnesempala privata</i>	1				
4	<i>Eucalyptus</i>	<i>grandis</i>	Brazil	D	Truffle	<i>Pisolithus tinctorius</i>	2				Junghans <i>et al.</i> , 1998
4	<i>Eucalyptus</i>	<i>grandis</i>	Australia	I	Beetle	<i>Paropsis atomaria</i>	1				Henery, 2006
4	<i>Eucalyptus</i>	<i>grandis</i>	Brazil	D	Rust	<i>Puccinia psidii</i>	12				Junghans <i>et al.</i> , 2003
4	<i>Eucalyptus</i>	<i>tricarpa</i>	Australia	I	Beetle	<i>Anoplognathus montanus</i>	1				Andrew <i>et al.</i> , 2007

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4	<i>Fraxinus</i>	<i>americana</i>	USA	I	Emerald ash borer	<i>Agrilus planipennis</i>	1	Jennifer Koch	jkoch@fs.fed.us	Northern Research Station, Forest Service, 359 Main Rd. Delaware, OH 43015	Koch, Carey & Larson, 2006
4	<i>Fraxinus</i>	<i>americana</i>	USA	I	Emerald ash borer	<i>Agrilus planipennis</i>	3	Rick Meilan	rmeilan@purdue.edu	<a href="http://www.agriculture.purdue.edu/fnr/html/faculty/Meilan/index.htm">http://www.agriculture.purdue.edu/fnr/html/faculty/Meilan/index.htm</a>	
4	<i>Gleditsia</i>	<i>triacanthos</i>	USA	I	Mimosa webworm	<i>Homodauia anisocentra</i>	1				Bastain & Hart, 1990
4	<i>Gleditsia</i>	<i>triacanthos</i>	USA	I	Honey locust plant bug	<i>Diaphnocaris chlorionis</i>	1				Herms, Nielsen & Syndor, 1987; Smitley & Peterson, 1997
4	<i>Hevea</i>	<i>brasiliensis</i>	India	I		<i>Oidium heveae</i>	1	P.M. Priyadarshan	pmpriyadarshan@hotmail.com		
4	<i>Hevea</i>	<i>brasiliensis</i>	Brazil	D	Leaf blight	<i>Microcyclus ulei</i>	2				Kalil Filho, Del Lama & Mestriner, 1995
4	<i>Hevea</i>	<i>braesiliensis</i>	France	D	Leaf blight	<i>Microcyclus ulei</i>	2				Le Guen <i>et al.</i> , 2003
4	<i>Hevea</i>	<i>braesiliensis</i>	Columbia	D	Leaf blight	<i>Microcyclus ulei</i>	1	Dolly Montoya Castano, Fabio Aristizabal	dmontoyac@unal.edu.co, faaristizabalg@unal.edu.co		
4	<i>Ilex</i>	spp	USA	I	Two lined spittlebug	<i>Prosapia bicincta</i>	1				Braman & Ruter, 1997
4	<i>Juglans</i>	<i>cinerea</i>	USA	D	Butternut canker	<i>Sirococcus clavignenti-juglandacearum</i>	1	Keith Woeste & M. Ostry	woeste@purdue.edu; kwoeste@fs.fed.us	<a href="http://www.agriculture.purdue.edu/fnr/HTIRC/woeste.html">http://www.agriculture.purdue.edu/fnr/HTIRC/woeste.html</a>	Ostry & Woeste, 2004
4	<i>Juniperus</i>	<i>virginiana</i>	USA	D	Blight	<i>Pseudocercospora juniperi</i>	1				Zhang, Klopfenstein & Peterson, 1997
4	<i>Juniperus</i>	spp	USA	I	Bagworm	<i>Thyridopteryx ephemeraeformis</i>	1				Johnson, Potter & Gilmore, 1993
4	<i>Larix</i>	<i>decidua</i>	France	D	Larch canker	<i>Lachnellula willkommii</i>	1				Pâques, Sylvestre-Guinot & Delatour, 1999
4	<i>Larix</i>	spp	USA	I			3	Dave Karnofski	karnosky@mtu.edu	<a href="http://forest.mtu.edu/faculty/karnosky/">http://forest.mtu.edu/faculty/karnosky/</a>	Shin D. I., Podila G. K., Huang Y., Karnosky D. F. 1994.
4	<i>Larix</i>	<i>leptolepis</i> & hybrid, <i>gmelini</i> var. <i>japnica</i> & hybrid	Japan	M	Vole	<i>Clethrionomys rufocanus bedfordiae</i>	1	Takayoshi Takeda	<a href="mailto:takayoshi-takeda@oijpaper.co.jp">takayoshi-takeda@oijpaper.co.jp</a>	Forest Museum, Oji Paper Co., Ltd., Yuchi-90, Kuriyama-cho, Yubari-gun, Hokkaido, 069-1508 Japan.	Chiba, 1963; Chiba, Nagata & Tomaki, 1982; Nagata, Tomaki & Chiba, 1989; Chiba, Nagata & Tomaki, 1989
4	<i>Larix</i>	spp.	Japan	D	Needle cast; Shoot blight	<i>Mycosphaerella larici-leptolepis</i> ; <i>Pysalospora laricina</i>	1	Takayoshi Takeda	<a href="mailto:takayoshi-takeda@oijpaper.co.jp">takayoshi-takeda@oijpaper.co.jp</a>	Forest Museum, Oji Paper Co., Ltd., Yuchi-90, Kuriyama-cho, Yubari-gun, Hokkaido, 069-1508 Japan.	Chiba & Nagata, 1963; Chiba & Nagata, 1972; Chiba & Nagata, 1978; Kohda, Chiba & Nagata, 1981

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4	<i>Lithocarpus</i>	<i>densiflora</i>	USA	D	Root rot	<i>Phytophthora ramorum</i>	1	Susan Frankel, Richard Sniezko, Jessica Wright, Matteo Garbelotto, Katy Hayden	sfrankel@fs.fed.us	http://www.suddenoakdeath.org , http://www.fs.fed.us/psw/programs/sod/	Hayden & Garbelotto, 2005
4	<i>Milicia</i>	<i>excelsa</i>	Ghana	I	Gall aphid	<i>Phytolyma lata</i>	1				Ofori <i>et al.</i> , 2000
4	<i>Picea</i>	<i>abies</i>	Norway	D	Root rot	<i>Heterobasidion annosum</i>	2				Hietala <i>et al.</i> , 2003
4	<i>Picea</i>	<i>abies</i>	Sweden	D	Root rot	<i>Heterobasidium annosum</i>	1				Swedjemark, Stenlid & Karlsson, 1997
4	<i>Picea</i>	<i>glauca</i>	Canada	D	Wood decay	<i>Trametes versicolor</i> / <i>Fomitopsis pinicola</i> / <i>Gloeophyllum trabeum</i>	1				Yu & Yang, 2003
4	<i>Picea</i>	<i>sitchensis</i>	Denmark	I	Spruce aphid	<i>Elatobium abietinum</i>	12	Hubert Wellendorf			Skov & Wellendorf, 2000
4	<i>Pinus</i>	<i>tabulaeformis</i>	China	I	Pine bast scale	<i>Matsucoccus matsumurae</i>	1				
4	<i>Pinus</i>	<i>alibicaulis</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Mary Mahalovich, Richard Sniezko	mmahalovich@fs.fed.us , rsniezko@fs.fed.us	http://www.fs.fed.us/r6/dorena/	Mahalovich, 2004
4	<i>Pinus</i>	<i>densiflora</i>	Japan	D	Pine wild		1	T. Toda		Kyushu Regional Breeding Office, Forest Tree Breeding Center, 2320-5, Suya, Nishigoshi, Kumamoto 861-1102, Japan	
4	<i>Pinus</i>	<i>densiflora</i>	Japan	N			1	T. Toda		Kyushu Regional Breeding Office, Forest Tree Breeding Center, 2320-5, Suya, Nishigoshi, Kumamoto 861-1102, Japan	Toda, Kurinobu & Sasaki, 2002
4	<i>Pinus</i>	<i>elliotti</i>	USA	D	Fusiform rust	<i>Cronartium quercuum</i>	1	Tom Kubisiak	<a href="mailto:tkubisiak@fs.fed.us">tkubisiak@fs.fed.us</a>	http://digital.library.okstate.edu/Forestry/sf27p060.pdf	Bridgwater <i>et al.</i> , 2003
4	<i>Pinus</i>	<i>hybrids</i>	Korea	I	Pine needle gall midge	<i>Thecodiplosis japonicus</i>	1				Son <i>et al.</i> , 1999
4	<i>Pinus</i>	<i>lambertiana</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	2	Dave Neale	dbneale@ucdavis.edu	http://dendrome.ucdavis.edu/NealeLab/index.html	Devey <i>et al.</i> , 1995
4	<i>Pinus</i>	<i>lambertiana</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	2	Dave Neale	dbneale@ucdavis.edu	http://dendrome.ucdavis.edu/NealeLab/index.html	Harkins <i>et al.</i> , 1998
4	<i>Pinus</i>	<i>lambertiana</i>	USA	D	White pine blister rust	<i>Cronartium ribicola</i>	2	Dave Neale	dbneale@ucdavis.edu	http://dendrome.ucdavis.edu/NealeLab/index.html	Jermstad <i>et al.</i> , 2007
4	<i>Pinus</i>	<i>palustris</i>	USA	D	Brown spot	<i>Scirrhia acicola</i>	1	Dana Nelson	dananelson@fs.fed.us	http://digital.library.okstate.edu/Forestry/	Gwaze, Lott & Nelson, 2003

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4	<i>Pinus</i>	<i>pinaster</i>	France	I	Moth	<i>Dioryctria sylvestrella</i>	1				Kleinhentz, Raffin & Jactel, 1998
4	<i>Pinus</i>	<i>pinaster</i>	Spain	I	Large pine weevil	<i>Hylobius abietis</i>	1	Rafael Zas	rzas.cifal@siam-cma.org		Zas <i>et al.</i> , 2005; Zas <i>et al.</i> , 2006
4	<i>Pinus</i>	<i>pinaster</i>	Spain	D	Root rot	<i>Armillaria ostoyae</i>	1	Rafael Zas	rzas.cifal@siam-cma.org		Zas, Solla & Sampedro, 2007
4	<i>Pinus</i>	<i>radiata</i>	Spain	I	Large pine weevil	<i>Hylobius abietis</i>	1	Rafael Zas	rzas.cifal@siam-cma.org		Zas, R., Sampedro, L., Moreira, X., Martins, P. 2007.
4	<i>Pinus</i>	<i>radiata</i>	Australia	D	Needle blight	<i>Dothistroma septospora</i>	2				Devey <i>et al.</i> , 2004
4	<i>Pinus</i>	<i>radiata</i>	Australia	I & D			1				Simpson & Ades, 1990
4	<i>Pinus</i>	<i>radiata</i>	Australia	I	Pine aphid	<i>Essigella</i>	1	Harry Wu			
4	<i>Pinus</i>	<i>radiata</i>	USA	D	Rust	<i>Endocronartium harkinessii</i>	1	Rowland Burdon	Rowland.Burdon@ensisjv.com		Old <i>et al.</i> , 1986
4	<i>Pinus</i>	<i>radiata</i>	New Zealand	D	Needle blight	<i>Dothistroma septospora</i>	1	Rowland Burdon	Rowland.Burdon@ensisjv.com		Burdon <i>et al.</i> , 1997
4	<i>Pinus</i>	<i>radiata</i>	New Zealand	D	Needle cast	<i>Cyclaneusma minus</i>	1	Rowland Burdon	Rowland.Burdon@ensisjv.com		Burdon <i>et al.</i> , 1997
4	<i>Pinus</i>	<i>radiata</i>	New Zealand	D	Tip blight	<i>Diplodia pinea</i>	1	Rowland Burdon	Rowland.Burdon@ensisjv.com		Burdon & Bannister, 1973
4	<i>Pinus</i>	<i>radiata</i>	New Zealand	I	Pine woolly aphid	<i>Pineus pini</i>	1	Rowland Burdon	Rowland.Burdon@ensisjv.com		Burdon <i>et al.</i> , 1998
4	<i>Pinus</i>	<i>radiata</i>	New Zealand	I			3	Lynette Grace	lynette.grace@forestresearch.co.nz	http://www.scionresearch.com/functional+analysis+of+genes.aspx?PageContentMode=1	Grace <i>et al.</i> , 2005
4	<i>Pinus</i>	spp	USA	I	Cone worm	<i>Dioryctria amatella</i>	1				Sartor & Neel, 1971
4	<i>Pinus</i>	spp	USA	I	Tip moth	<i>Rhyacionia frustrana</i>	1	Dana Nelson	dananelson@fs.fed.us	http://digital.library.okstate.edu/Forestry/sf27p208.pdf	Highsmith <i>et al.</i> , 2003
4	<i>Pinus</i>	spp	USA	D	Pitch canker	<i>Fusarium circinatum</i>	2	John Davis	Jmdavis@ufl.edu	http://digital.library.okstate.edu/Forestry/sf27p214.pdf	Smith <i>et al.</i> , 2003
4	<i>Pinus</i>	<i>strobis x peuce</i>	Romania	D	White pine blister rust	<i>Cronartium ribicola</i>	1	Blada, I		Forest Research Institute, Sos. Stefanesti 128, Bucharest 11, Romania	Blada, 2000
4	<i>Pinus</i>	<i>sylvestris</i>	France	D	Pinetwist rust	<i>Melampsora pinitorqua</i>	1				Quencez & Bastien, 2001
4	<i>Pinus</i>	<i>sylvestris</i>	Germany	I	Shoot beetle; Weevil	<i>Tomicus; Pissodes</i>	1	Volker Schneck	v.schneck@holz.uni-hamburg.de		Schneck, 1992
4	<i>Pinus</i>	<i>taeda</i>	USA	D	Fusiform rust	<i>Cronartium quercuum</i>	1				Kraus, 1986
4	<i>Pinus</i>	<i>taeda</i>	USA	D	Pitch canker; Fusiform rust	<i>Fusarium circinatum, Cronartium quercuum.</i>	2				Kayihan <i>et al.</i> , 2005

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4	<i>Pinus</i>	<i>taeda</i>	USA	I	Pine caterpillar	<i>Dendrolimus punctatus</i> ; <i>Crypyothelea formosicola</i>	3				Tang & Tian, 2003
4	<i>Pinus</i>	<i>thunbergii</i>	Japan	I	Pine needle gall midge	<i>Thecodiplosis japonensis</i>	2	E. Hayashi	ehayas2002@yahoo.co.jp	Forest Tree Breeding Center, Ishi, Juo, Taga, 319-1301 Ibaraki, Japan	Hayashi <i>et al.</i> , 2004
4	<i>Pinus</i>	<i>thunbergii</i>	Japan	I	Pine needle gall midge	<i>Thecodiplosis japonensis</i>	1				Terada, 1992
4	<i>Pinus</i>	<i>thunbergii</i>	Korea	I	Pine needle gall midge	<i>Thecodiplosis japonensis</i>	1				Kim <i>et al.</i> , 1978
4	<i>Pinus</i>	<i>radiata</i>	New Zealand	I	Painted apple moth	<i>Teia anartoides</i>	3				Grace <i>et al.</i> , 2005
4	<i>Pinus</i>	<i>sylvestris</i>	Finland	D	Brown rot	<i>Coniophora puteana</i>	1				Harju <i>et al.</i> , 2001
4	<i>Pinus</i>	<i>taeda</i>	USA	D	Fusiform rust	<i>Cronartium quercuum</i>	12	Henry Amerson, Tom Kubisiak,	amerson@unity.ncsu.edu, tkubisiak@fs.fed.us		
4	<i>Pinus</i>	<i>taeda</i>	USA	D	Fusiform rust	<i>Cronartium quercuum</i>	2	John Davis, Sarah Covert	Jmdavis@ufl.edu, covert@uga.edu	<a href="http://dendrome.ucdavis.edu/adept/">http://dendrome.ucdavis.edu/adept/</a>	Morse <i>et al.</i> , 2004
4	<i>Pinus</i>	<i>taeda</i>	USA	D			23	Alex Diner		<a href="http://digital.library.okstate.edu/Forestry/sf27p173.pdf">http://digital.library.okstate.edu/Forestry/sf27p173.pdf</a>	Juang <i>et al.</i> , 2003
4	<i>Pinus</i>	<i>taeda</i>	USA	D	Fusiform rust	<i>Cronartium quercuum</i>	2				Zeng <i>et al.</i> , 2004
4	<i>Platanus</i>	<i>occidentalis</i>	France	D	Canker stain	<i>Ceratocystis fimbriata</i>	1				Vigouroux & Oliver, 2004
4	<i>Populus</i>	<i>deltoides</i>	USA	I	Cottonwood leaf beetle	<i>Chrysomela scripta</i>	1				Oliveria & Cooper, 1977
4	<i>Populus</i>	<i>alba</i>	Italy	I	Cottonwood leaf beetle	<i>Chrysomela populi</i>	3				Delledonne I., 2001
4	<i>Populus</i>	<i>deltoides</i>	China	I	Cerambycidae borer	<i>Apriona germarii</i>	1				Hu <i>et al.</i> , 2002
4	<i>Populus</i>	<i>deltoides x smonii</i>	China	I			3			Biotechnology Research Centre, CAAS, Beijing	Wu <i>et al.</i> , 2000
4	<i>Populus</i>	<i>deltoides</i>	India	I	Leaf eater	<i>Clostera cupreata</i>	1				Singh & Pandey, 2002
4	<i>Populus</i>	<i>deltoides</i>	China	I	Cerambycidae borer	<i>Apriona germarii</i>	1			Research Institute of Forestry, CAF, Beijing 100091, China	Hu <i>et al.</i> , 2002
4	<i>Populus</i>	<i>deltoides x cathayana</i>	China	D	Stem decay	<i>Dothiorella gregaria</i>	1			Research Institute of Forestry, CAF, Beijing 100091, China	Li <i>et al.</i> , 2004
4	<i>Populus</i>	spp	USA	D	Leaf rust	<i>Melampsora medusae</i>	2				Newcombe <i>et al.</i> , 1996
4	<i>Populus</i>	spp	Belgium	D	Leaf rust	<i>Melampsora larici-populina</i>	2				Cervera <i>et al.</i> , 1996
4	<i>Populus</i>	spp	Belgium	D	Leaf rust	<i>Melampsora spp.</i>	2				Maertens <i>et al.</i> , 2004
4	<i>Populus</i>	spp	Canada	D			3				Mentag <i>et al.</i> , 2003
4	<i>Populus</i>	spp	Canada	I	Leaf rust	<i>Malacosoma disstria</i>	3				Wang & Constabel, 2004

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4	<i>populus</i>	spp	Canada	D			3				Lapointe <i>et al.</i> , 2001
4	<i>Populus</i>	spp	China	I			3				Zhang <i>et al.</i> , 2002
4	<i>Populus</i>	spp	China	D	Black spot	<i>Drepanopeziza populorum</i>	2				Zhang <i>et al.</i> , 2004
4	<i>Populus</i>	spp	China	I & D			3	Zhao-Xin		Northeast Forestry University, Harbin 150040, China	Zhao, Zhan & Liu, 2004
4	<i>Populus</i>	spp	China	D	Canker		1			Research Institute of Forestry, CAF, Beijing 100091, China	Huang & Su, 2003
4	<i>Populus</i>	spp	France	D	Leaf rust	<i>Melampsora larici-populina</i>	2				Dowkiw, 2002
4	<i>Populus</i>	spp	France	D	Leaf rust	<i>Melampsora spp.</i>	1				Lefèvre, Faivre Rampant & Villar, 1993
4	<i>Populus</i>	spp	France	I	Poplar leaf beetle	<i>Chrysomela tremulae</i>	3				Augustin <i>et al.</i> , 2004
4	<i>Populus</i>	spp	France	I	Poplar leaf beetle	<i>Chrysomela tremulae</i>	3				Leplé <i>et al.</i> , 1995
4	<i>Populus</i>	spp	India	I & D			1			Silviculture Division, Sal Region, Rampur Road, Haldwani, Uttar Pradesh-263139, India	Jha & Kumar, 2000
4	<i>Populus</i>	spp	USA	D	Leaf spot	<i>Septoria musiva</i>	3				Liang <i>et al.</i> , 2001.
4	<i>Populus</i>	spp	USA	D	Leaf rust	<i>Melampsora spp.</i>	1				Prakash & Thielges, 1986.
4	<i>Populus</i>	spp	USA	D	Leaf spot	<i>Septoria musiva</i>	2				Ostry <i>et al.</i> , 1988
4	<i>Populus</i>	spp	USA	D	Leaf rust	<i>Melampsora</i>	2				Yin <i>et al.</i> , 2004
4	<i>Populus</i>	spp	USA	I	Cottonwood leaf beetle	<i>Chrysomela scripta</i>	3				James, Croft & Strauss, 1999
4	<i>Populus</i>	spp	USA	I	Cottonwood leaf beetle	<i>Chrysomela scripta</i>	2				Coyle, 2000; Coyle <i>et al.</i> , 2001
4	<i>Populus</i>	spp	USA	I	Cottonwood leaf beetle	<i>Chrysomela scripta</i>	3				Meilan, <i>et al.</i> , 2000.
4	<i>Populus</i>	<i>x canadensis</i>	USA	I	Poplar & willow borer	<i>Cryptorhynchus lapathi</i>	1	John Brown	brownjj@mail.wsu.edu		Johnson & Johnson, 2003
4	<i>Populus</i>	spp	USA	D	Leaf rust	<i>Melampsora medusae</i>	1				Newcombe <i>et al.</i> , 1996
4	<i>Populus</i>	spp	USA	I	Forest tent caterpillar	<i>Malacosoma disstria</i>	1				Robison & Raffa, 1994
4	<i>Populus</i>	<i>tomentosa</i>	China	I & D			3			Institute of Populus tomentosa, Beijing For. Univ., Beijing 100083, China	Lin, Xiao & Zhang, 2000
4	<i>Populus</i>	<i>tremula</i>	Finland	D			3				Seppänen <i>et al.</i> , 2004
4	<i>Populus</i>	<i>tremula x alba</i>	France	D			3				Nicolescu <i>et al.</i> , 1996
4	<i>Populus</i>	<i>tremuloides</i>	USA	D	Hypoxylon canker	<i>Hypoxylon</i>	1	Mike Ostry			Enebak, Ostry & Anderson, 1999
4	<i>Populus</i>	<i>trichocarpa</i>	USA	I			2				James & Newcombe, 2000

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4	<i>Populus</i>	<i>ussuriensis</i>	China	D	Leaf rust	<i>Melampsora larici-populina</i>	1	XiaoHua Su		Research Institute of Forestry, CAF, Beijing 100091, China	Su <i>et al.</i> , 2001
4	<i>Populus</i>	spp	USA	D	Leaf rust	<i>Melampsora</i>	2				Rinaldi <i>et al.</i> , 2004
4	<i>Populus</i>	<i>deltoides</i>	Belgium	D			3				Lescot <i>et al.</i> , 2004.
4	<i>Populus</i>	<i>maximowiczii</i>	Japan	I	Poplar tip moth	<i>Clostera anastomosis tristis</i>	1				Chiba, Nagata & Koizumi, 1985
4	<i>Populus</i>	<i>maximowiczii</i>	Japan	D	Leaf rust	<i>Melampsora larici-populina</i>	1	Takayoshi Takeda	takayoshi-takeda@ojipaper.co.jp	Forest Museum, Oji Paper Co., Ltd., Yuchi-90, Kuriyama-cho, Yubari-gun, Hokkaido, 069-1508 Japan.	Chiba, 1961; Chiba & Nagata, 1973; Chiba & Nagata, 1973; Nagata & Chiba, 1981; Kohda & Chiba, 1985
4	<i>Populus</i>	<i>tremula</i> L. X <i>P. Alba</i>	France	D	Crown gall		1				Nesme, Beneddra & Collin, 1990
4	<i>Populus</i>	Sections: <i>Tacamahaca</i> , <i>Leuce</i> , <i>Aigeiros</i> , hybrids	Germany	I & D	Leaf rust	<i>Pollacia elegans</i> , <i>Melampsora</i> rusts, <i>Chrysomelids</i>	1	Volker Schneck	v.schneck@holz.uni-hamburg.de		
4	<i>Populus</i>	many	Germany	I			3	Dietrich Ewald	ewald@holz.uni-hamburg.de		Fladung & Ewald, 2007
4	<i>Populus</i>	spp	New Zealand	D	Rust	<i>Malampsora</i>	1		<a href="mailto:allan.wilkinson@clear.net.nz">allan.wilkinson@clear.net.nz</a>	SCION, Rotorua, New Zealand	Wilkinson, 2000
4	<i>Prunus</i>	<i>avium</i>	Spain	D	Canker		1				Santi <i>et al.</i> , 2004
4	<i>Pseudotsuga</i>	<i>menziesii</i>	Canada	D	Root rot	<i>Phellinus sulphurascens</i> ; <i>P. weirii</i>	12	Rona Sturrock	rsturroc@pfc.cfs.nrcan.gc.ca	Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre, Victoria, BC, Canada	Ekramoddoullah <i>et al.</i> 2000; Sturrock, Islam & Ekramoddoullah, 2007; Sturrock, 2005
4	<i>Pseudotsuga</i>	<i>menziesii</i>	Canada	D	Root rot	<i>Armillaria ostoyae</i>	1	Mike Cruickshank, Barry Jaquish		Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre, Victoria, BC, Canada; BC Ministry of Forests, Kalamalka Research Station, 3401 Reservoir Rd, Vernon, BC	Cruickshank <i>et al.</i> , 2006; Robinson & Morrison, 1994.
4	<i>Pseudotsuga</i>	spp	Canada	D	Baculovirus	Baculovirus	3				
4	<i>Pseudotsuga</i>	<i>menziesii</i>	New Zealand	D	Needlecast	<i>Phaeocryptopus gaeumannii</i>	1				Kimberley & Hood, 2005
4	<i>Quercus</i>	spp	USA	D	Root rot	<i>Phytophthora ramorum</i>	1	Susan Frankel	sfrankel@fs.fed.us	<a href="http://www.suddenoakdeath.org">http://www.suddenoakdeath.org</a> , <a href="http://www.fs.fed.us/psw/programs/sod/">http://www.fs.fed.us/psw/programs/sod/</a>	
4	<i>Quercus</i>	spp	USA	I	Orange striped oakworm	<i>Anisota senatoria</i>	1				Coffelt & Schultz, 1993
4	<i>Quercus</i>	<i>robur</i>	Germany	I	Green oak leaf roller	<i>Tortrix viridana</i>	2	Hilke Schroder	h.schoeder@holz.uni-hamburg.de		Schroeder & Scholz, 2005

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4	<i>Salix</i>	<i>viminalis</i>	Sweden	D	Leaf rust	<i>Melampsora larici epitea</i>	2				Lascoux <i>et al.</i> , 1996
4	<i>Salix</i>	<i>viminalis</i>	Germany	D	Leaf rust	<i>Melampsora willow rusts</i>	2	Irmtraut Zaspel	zaspel@holz.uni-hamburg.de		Liesebach & Zaspel, 2005
4	<i>Tectona</i>	<i>grandis</i>	India	I	Leaf eater	<i>Hyblaea puera</i>	1				Ahmad, 1987
4	<i>Tectona</i>	<i>grandis</i>	India	I	Leaf eater	<i>Eutectona machaeralis</i>	1				Roychoudhury, 2002
4	<i>Tectona</i>	<i>grandis</i>	India	I	Cluster caterpillar	<i>Spodoptera litura</i>	1			Forest Entomology Division, Tropical Forest Research Institute, Jabalpur (Madhya Pradesh), India	Roychoudhury <i>et al.</i> , 1999; Roychoudhury & Joshi, 2000
4	<i>Thuja</i>	<i>plicata</i>	Canada	M	Deer		1				Russell, 2004
4	<i>Thuja</i>	<i>plicata</i>	Canada	D	Needle blight	<i>Didymascella thujina</i>	1				Russell, 2004
4	<i>Ulmus</i>	<i>spp</i>	Spain	I	Bark beetles		1	J A Pajares	jpajares@pvs.uva.es	Dept de Produccion Vegetal, Escuela Tecnica Superior de Ingenierias Agrarias, Universidad de Valladolid, Avda. Madrid, 44, 34002 Palencia, Spain	Pajares, 2004
4	<i>Ulmus</i>	<i>spp</i>	UK	D	Dutch elm disease	<i>Ophiostoma ulmi</i>	3	Kevin Gartland	k.gartland@abertay.ac.uk	University of Abertay Dundee's School of Science & Engineering, Dundee DD1 1HG, Scotland, UK	Garland & Gartland, 2002
4	<i>Variable</i>	<i>spp</i>	Indonesia	I & D			2				Butcher, 2003; Sudarmonowati, 2003
<b>Notes on table:</b>											
*	<b>Status:</b>										
	1 = Breeding programmes with deployed resistant material.										
	2 = Programmes breeding for resistance, no deployed material										
	3 = Resistance detected in genetic/provenance trials										
	4 = Evidence in genetic variation in resistance in seedling or clonal screens										
**	<b>Pest type:</b>										
	D = disease, I = insect, M = mammal; N = nematode										
***	<b>Approach:</b>										
	1 = traditional plant breeding methods used										
	2 = molecular biology approaches										
	3 = genetic engineering										