

References

Abbas HK, Mirocha CJ, Kommedahl T, Vesonder RF, Golinski P, 1989. Production of trichothecene and non-trichothecene mycotoxins by *Fusarium* species isolated from maize in Minnesota. *Mycopathologia* 108, 55-8.

Able AM, 2003. Role of reactive oxygen species in the response of barley to necrotrophic pathogens. *Protoplasma* 221, 137-43.

Agrios GN, 1988. *Plant pathology*. London: Academic Press.

Agrios GN, 1997. *Plant pathology*. London: Academic Press.

Aharon GS, Gelli A, Snedden WA, Blumwald E, 1998. Activation of a plant plasma membrane Ca²⁺ channel by TGa1, a heterotrimeric G protein α -subunit homologue. *Federation of European Biochemical Societies* 424, 17-21.

Alexander NJ, Hohn TM, McCormick SP, 1998. The TRI11 gene of *Fusarium sporotrichioides* encodes a cytochrome P-450 monooxygenase required for C-15 hydroxylation in trichothecene biosynthesis. *Applied and Environmental Microbiology* 64, 221-5.

Alexander NJ, Hohn TM, McCormick SP, 1999. TRI12, a trichothecene efflux pump from *Fusarium sporotrichioides*: gene isolation and expression in yeast. *Molecular Genetics and Genomics* 261, 977-84.

Antoniw JF, Ritter CE, Peirpoint WS, van Loon LC, 1980. Comparison of three pathogen-related proteins from plants of two cultivars of tobacco infected with TMV. *Journal of General Virology* 47, 79-87.

Arnon I, 1972. *Crop production in dry region: Systemic treatment of the principal crops*. London: Leonard Hill 73-90

Arumuganathan K, Earle ED, 1991. Nuclear DNA content of some important plant species. *Plant molecular Biological Reporter* 9, 208-18.

Bai G, Shaner G, 2004. Management and resistance in wheat and barley to *Fusarium* head blight. *Annual Review of Phytopathology* 42, 135-61.

Baker CJ, Orlandi EW, 1995. Active oxygen in plant pathogenesis. *Annual Review of Phytopathology* 33, 299-321.

Baron C, Zambryski PC, 1995. The plant response in pathogenesis, symbiosis, and wounding: Variations on a common theme? *Annual Review of Genetics* 29, 107-29.

Bent AF, 1996. Plant disease resistance genes: Function meets structure. *The Plant Cell* 8, 1757-71.

Bernardo A, Bai G, Guo P, Xiao K, Guenci AC, Ayoubi P, 2007. *Fusarium graminearum*-induced changes in gene expression between *Fusarium* head blight-resistance and susceptible wheat cultivars. *Functional & Integrative Genomics* 7, 69-77.

Blumwald E, Aharon GS, Lam BCH, 1998. Early signal transduction pathways in plant-pathogen interactions. *Trends in Plant Science* 3, 342-6.

Booth C, 1971. The genus *Fusarium*. England: Commonwealth Mycological Institute.

Botha A-M, Lacock L, van Niekerk C, Matsioloko TM, du Preez FB, Loots S, Venter E, Kunert KJ, Cullis CA, 2006. Is photosynthesis transcriptional regulation in *Triticum aestivum* L. cv. 'TugelaDN' a contributing factor for tolerance to *Diuraphis noxia* (Homoptera: Aphididae)? *Plant Cell Rep* 25, 41-54.

Bradley DJ, Kjellbom P, Lamb CJ, 1992. Elicitor- and wound-induced oxidative cross-linking of a proline-rich plant cell wall protein: A novel, rapid defense response. *Cell* 70, 21-30.

Buerstmayr H, Lemmens M, Hartl L, Doldi L, Steiner B, Stierschneider M, Ruckenbauer P, 2002. Molecular mapping of QTLs for Fusarium head blight resistance in spring wheat. I. Resistance to fungal spread (Type II resistance). *Theoretical and Applied Genetics* 104, 84-91.

Bush DS, 1995. Calcium regulation in plant cells and its role in signaling. *Annual Review of Plant Physiology and Plant Molecular Biology* 46, 95-122.

Canci PC, Nduulu LM, Muehlbauer GJ, Dill-Macky R, Rasmusson DC, Smith KP, 2004. Validation of quantitative trait loci for Fusarium head blight and kernel discoloration in barley. *Molecular Breeding* 14, 91-104.

Capettini F, Rasmusson DC, Dill-Macky R, Schiefelbein E, Elakkad A, 2003. Inheritance of resistance to Fusarium head blight in four populations of barley. *Crop Science* 43, 1960-6.

Carver TLW, Ingerson-Morris SM, Thomas BJ, Zeyen RJ, 1995. Early interactions during powdery mildew infection. *Canadian Journal of Botany* 73, S632-9.

Chaure P, Gurr SJ, Spanu P, 2000. Stable transformation of *Erysiphe graminis* an obligate biotrophic pathogen of barley. *Nature Biotechnology* 18, 205-7.

Chelkowski J, Wiśniewska H, Adamski T, Goliński P, Kaczmarek Z, Kostecki M, Perkowski J, Surma M, 2000. Effects of *Fusarium culmorum* head blight on mycotoxin accumulation and yield traits in barley doubled haploids. *Journal of Phytopathology* 148, 541-5.

Clark TA, Zeyen RJ, Carver TLW, Smith AG, Bushnell WR, 1995. Epidermal cell cytoplasmic events and response gene transcript accumulation during *Erysiphe graminis* attack in isogenic barley lines differing at the Mlo locus. *Physiological and Molecular Plant Pathology* 46, 1-16.

Dahleen LS, Agrama HA, Horsley RD, Steffenson BJ, Schwarz PB, Mesfin A, Franckowiak JD, 2003. Identification of QTLs associated with Fusarium head blight resistance in Zhedar 2 barley. *Theoretical and Applied Genetics* 108, 95-104.

Dangl JL, Dietrich RA, Richberg MH, 1996. Death don't have no mercy: Cell death programs in plant-microbe interactions. *The Plant Cell* 8, 1793-807.

Dangl JL, Jones JD, 2001. Plant pathogens and integrated defence responses to infection. *Nature* 411, 826-33.

de la Pena, R. C., Smith KP, Capettini F, Muehlbauer GJ, Gallo-Meagher M, Dill-Macky R, Somers DA, Rasmusson DC, 1999. Quantitative trait loci associated with resistance to Fusarium head blight and kernel discoloration in barley. *Theoretical and Applied Genetics* 99, 561-9.

Delaney TP, Uknes S, Vernooij B, Friedrich L, Weymann K, Negrotto D, Gaffney T, Gut-Rella M, Kessmann H, Ward E, Ryals J, 1994. A central role of salicylic acid in plant disease resistance. *Science* 266, 1247-50.

Desjardins AE, Hohn TM, 1997. Mycotoxins in Plant Pathology. *Molecular Plant-Microbe Interactions* 10, 147-52.

Desjardins AE, Hohn TM, McCormick SP, 1993. Trichothecene biosynthesis in *Fusarium* species: Chemistry, genetics, and significance. *Microbiological Reviews* 57, 595-604.

Desjardins AE, Manandhar G, Plattner RD, Maragos CM, Shrestha K, McCormick SP, 2000. Occurrence of *Fusarium* species and mycotoxins in Nepalese maize and wheat and the effect of traditional processing methods on mycotoxin levels. *Journal of Agricultural and Food Chemistry* 48, 1377-83.

Desmond OJ, Edgar CI, Manners JM, Maclean DJ, Schenk PM, Kazan K, 2006. Methyl jasmonate induced gene expression in wheat delays symptom development by the crown rot pathogen *Fusarium pseudograminearum*. *Physiological and Molecular Plant Pathology* 67, 171-179.

Devoto A, Piffanelli P, Nilsson I, Wallin E, Panstruga R, von Heijne G, Schulze-Lefert P, 1999. Topology, subcellular localization, and sequence diversity of the Mlo family in plants. *Journal of Biological Chemistry* 274, 34993-5004.

Diatchenko L, Lau YFC, Campbell AP, Chenchik A, Moqadam F, Huang B, Lukyanov S, Lukyanov K, Gurskaya N, Sverdlov ED, Siebert PD, 1996. Suppression subtractive hybridization: A method for generating differentially regulated or tissue-specific cDNA probes and libraries. *Proceedings of the National Academy of Sciences* 93, 6025-6030.

Dixon RA, Lamb CJ, 1990. Molecular communication in interactions between plants and microbial pathogens. *Annual Review of Plant Physiology Plant Molecular Biology* 41, 339-67.

Ebel J, Scheel D, 1997. Signals in host-parasite interactions. *In the Mycota, Plant Relationship part A*. Berlin: Springer-Verlag.

Ellingboe AH, 1972. Genetics and physiology of primary infection by *Erysiphe graminis*. *Phytopathology* 62, 401-6.

Ellis J, Dodds P, Pryor T, 2000. The generation of plant disease resistance gene specificities. *Trends in Plant Science* 5, 373-9.

Epple P, Apel K, Bohlmann H, 1995. An *Arabidopsis thaliana* thionin gene is inducible via a signal transduction pathway different from that for pathogenesis-related proteins. *Plant Physiology* 109, 813-20.

Fay MF, Cowan RS, Leitch JI, 2005. The effects of nuclear DNA content (C-value) on the quality and utility of AFLP fingerprints. *Annals of Botany* 95, 237-46.

Flor HH, 1971. Current status of the gene-for-gene concept. *Annual Review of Phytopathology* 9, 275-81.

Freialdenhoven A, Peterhansel C, Kurth J, Kreuzaler F, Schulze-Lefert P, 1996. Identification of genes required for the function of non-race-specific *mlo* resistance to powdery mildew in barley. *The Plant Cell* 8, 5-14.

Fritig B, Heitz T, Legrand M, 1998. Antimicrobial proteins in induced plant defense. *Current Opinion in Immunology* 10, 16-22.

Garcia-Olmedo F, Molina A, Segura A, Moreno M, 1995. The defensive role of nonspecific lipid-transfer proteins in plants. *Trends in Microbiology* 3, 72-4.

Gilbert GA, Gadush MV, Wilson C, Madore MA, 1998. Amino acid accumulation in sink and source tissues of *Coleus blumei* Benth. during salinity stress. *Journal of Experimental Botany* 49, 107-14.

Gelli A, Higgins VJ, Blumwald E, 1997. Activation of plant plasma membrane Ca^{2+} -permeable channels by race-specific fungal elicitors. *Plant Physiology* 113, 269-79.

Gilman AG, 1987. G proteins: Transducers of receptor-generated signals. *Annual Review of Biochemistry* 56, 615-49.

Goswami RS, Kistler HC, 2004. Heading for disaster: *Fusarium graminearum* on cereal crop. *Molecular Plant Pathology* 5, 515-25.

Govrin EM, Levine A, 2000. The hypersensitive response facilitates plant infection by the necrotrophic pathogen *Botrytis cinerea*. *Current Biology* 10, 751-7.

Green TR, Ryan CA, 1972. Wound-induced proteinase inhibitor in plant leaves: A possible defense mechanism against insects. *Science* 175, 776-7.

Gregersen PL, Thordal-Christensen H, Forster H, Collinge DB, 1997. Differential gene transcript accumulation in barley leaf epidermis and mesophyll in response to attack by *Blumeria graminis* f.sp. *hordei* (syn. *Erysiphe graminis* f.sp. *hordei*). *Physiological and Molecular Plant Pathology* 51, 85-97.

Halterman D, Zhou F, Wei F, Wise RP, Schulze-Lefert P, 2001. The MLA6 coiled-coil NBS-LRR protein confers *AvrMla6*-dependent resistance specificity to *Blumeria graminis* f.sp. *hordei* in barley and wheat. *The Plant Journal* 25, 335-48.

Hammond-Kosack KE, Jones JDG, 1996. Resistance gene-dependent plant defence response. *The Plant Cell* 8, 1773-91.

Heath MC, 1998. Apoptosis, programmed cell death and hypersensitive response. *European Journal of Plant Pathology* 104, 117-24.

Heath MC, 2000. Nonhost resistance and nonspecific plant defenses. *Current Opinion in Plant Biology* 3, 315-9.

Heath MC, 2000(a). Hypersensitive response-related death. *Plant Molecular Biology* 44, 321-34.

Heath MC, Nimchuk ZL, Xu H, 1997. Plant nuclear migrations as indicators of critical interactions between resistant or susceptible cowpea epidermal cells and invasion hyphae of the cowpea rust fungus. *New Phytologist* 135, 689-700.

Hein I, Campbell EI, Woodhead M, Hedley PE, Young V, Morris WL, Ramsay L, Stockhaus J, Lyon GD, Newton AC, Birch PRJ, 2004. Characterisation of early transcriptional changes involving multiple signalling pathways in the Mla13 barley interaction with powdery mildew (*Blumeria graminis* f. sp. *hordei*). *Planta* 218, 803-813.

Hill NS, Schwarz P, Dahleen LS, Neate SM, Horsley R, Glenn AE, O'Donnell K, 2006. ELISA analysis for *Fusarium* in barley: Development of methodology and field assessment. *Crop Science* 46, 2636-42.

Hopkins WG, 1999. Introduction to plant physiology, (2nd Ed). USA: John Wiley and Sons Inc.

Huang L, Brooks S, Li W, Fellers J, Trick H, Gill B, 2003. Map-based cloning of leaf rust resistance gene Lr21 from the large and polyploid genome of bread wheat. *Genetics* 164, 655-64.

Hückelhoven R, Fodor J, Preis C, Kogel KH, 1999. Hypersensitive cell death and papilla formation in barley attacked by the powdery mildew fungus are associated with hydrogen peroxide and not salicylic acid. *Plant Physiology* 119, 1251-60.

Hückelhoven R, Kogel KH, 1998. Tissue-specific superoxide generation at interaction sites in resistance and susceptible near-isogenic barley lines attacked by the powdery mildew fungus (*Erysiphe graminis* f. sp. *hordei*). *Molecular Plant-Microbe Interactions* 11, 292-300.

Hückelhoven R, Kogel KH, 2003. Reactive oxygen intermediates in plant-microbe interactions: Who is who in powdery mildew resistance? *Planta* 216, 891-902.

Jabs T, 1999. Reactive oxygen intermediates as mediator of programmed cell death in plants and animals. *Biochemical Pharmacology* 57, 231-45.

Jabs T, Tschöpe M, Colling C, Hahlbrock K, Scheel D, 1997. Elicitor-stimulated ion fluxes and O₂⁻ from the oxidative burst are essential components in triggering defense gene activation and phytoalexin synthesis in parsley. *Proceedings of the National Academy of Sciences* 94, 4800-5.

Jansen C, von Wettstein D, Schafer W, Kogel KH, Felk A, Maier FJ, 2005. Infection patterns in barley and wheat spikes inoculated with wild-type and trichodiene synthase gene disrupted *Fusarium graminearum*. *Proceedings of the National Academy of Sciences* 102, 16892-7.

Johal GS, Briggs SP, 1992. Reductase activity encoded by the *HM1* disease resistance gene in maize. *Science* 258, 985-7.

Jones JDG, 1997. A kinase with keen eyes. *Nature* 385, 397-8.

Jones DA, Thomas CM, Hammond-Kosack KE, Balint-Kurti PJ, Jones JD, 1994. Isolation of the tomato *Cf-9* gene for resistance to *Cladosporium fulvum* by transposon tagging. *Science* 266, 789-93.

Jørgensen JH, 1994. Genetics of powdery mildew resistance in barley. *Critical Reviews in Plant Science* 13, 97-119.

Keen NT, 1990. Gene-for-gene complementarity in plant-pathogen interactions. *Annual Review of Genetics* 24, 447-63.

Keen NT, 1992. The molecular biology of disease resistance. *Plant Molecular Biology* 19, 109-22.

Kent-Jones DW, Amos AJ, 1967. *Modern Cereal Chemistry*, (6th Ed). London: Food Trade Press.

Kim MC, Panstruga R, Elliott C, Muller J, Devoto A, Yoon HW, Park HC, Cho MJ, Schulze-Lefert P, 2002. Calmodulin interacts with MLO protein to regulate defence against mildew in barley. *Nature* 416, 447-51.

Kimura M, Matsumoto G, Shingu Y, Yoneyama K, Yamaguchi I, 1998. The mystery of the trichothecene 3-O-acetyltransferase gene: Analysis of the region around Tri101 and characterization of its homologue from *Fusarium sporotrichioides*. *Federation of European Biochemical Societies* 435, 163-8.

Kimura M, Tokai T, Matsumoto G, Fujimura M, Hamamoto H, Yoneyama K, Shibata T, Yamaguchi I, 2003. Trichothecene nonproducer *Gibberella* species have both functional and nonfunctional 3-O-acetyltransferase genes. *Genetics* 163, 677-84.

Knogge W, 1996. Fungal infection of plants. *The Plant Cell* 8, 1711-22.

Kolb FL, Bai GH, Muehlbauer GJ, Anderson JA, Smith KP, Fedak G, 2001. Host plant resistance genes for Fusarium head blight: Mapping and manipulation with molecular markers. *Crop Science* 41, 611-9.

Lagrimini LM, Burkhart W, Moyer M, Rothstein S, 1987. Molecular cloning of complementary DNA encoding the lignin-forming peroxidase from tobacco: Molecular analysis and tissue-specific expression. *Proceedings of the National Academy of Sciences* 84, 7542-6.

Lahaye T, Bonas U, 2001. Molecular secrets of bacterial type III effector proteins. *Trends in Plant Science* 6, 479-85.

Lamb CJ, Lawton MA, Dron M, Dixon RA, 1989. Signals and transduction mechanisms for activation of plant defenses against microbial attack. *Cell* 56, 215-24.

Lee T, Han YK, Kim KH, Yun SH, Lee YW, 2002. *Tri13* and *Tri7* determine deoxynivalenol- and nivalenol-producing chemotypes of *Gibberella zeae*. *Applied and Environmental Microbiology* 68, 2148-54.

Lehnackers H, Knogge W, 1990. Cytological studies on the infection of barley cultivars with known resistance genotypes by *Rhynchosporium secalis*. *Canadian Journal of Botany* 68, 1953-61.

Leslie JF, Summerell BA, 2006. *Fusarium* laboratory manual. Oxford UK: Blackwell publishing.

Levine A, Tenhaken R, Dixon R, Lamb C, 1994. H₂O₂ from the oxidative burst orchestrates the plant hypersensitive disease resistance response. *Cell* 79, 583-593

Luderer R, Joosten MHAJ, 2001. Avirulence protein of plant pathogens: Determinants of victory and defeat. *Molecular Plant Pathology* 2, 355-64.

Lupas A, 1996. Coiled coils: New structures and new functions. *Trends in Biochemical Sciences* 21, 375-82.

Ma Z, Steffenson BJ, Prom LK, Lapitan NLV, 2000. Mapping of quantitative trait loci for Fusarium head blight resistance in barley. *The American Phytopathological Society* 90, 1079-88.

Mackey D, Belkhadir Y, Alonso JM, Ecker JR, Dangl JL, 2003. *Arabidopsis RIN4* is a target of the type III virulence effector *AvrRpt2* and modulates *RPS2*-mediated resistance. *Cell* 112, 379-89.

Maroof MAS, Yang GP, Biyashev RM, Maughan PJ, Zang Q, 1996. Analysis of the barley and rice genomes by comparative RFLP linkage mapping. *Theoretical and Applied Genetics* 92, 541-51.

Mathre DE, 1997. Compendium of barley diseases, (2ndEd). Montana: Montana State University.

McMullen M, Jones R, Gallenberg D, 1997. Scab of wheat and barley: A re-emerging disease of devastating impact. *Plant Disease* 81, 1340-8.

Melchers LS, Apotheker-de Groot M, Van der Knaap, J., Ponstein AS, Sela-Buurlage MB, Bol JF, Cornelissen BJC, van den Elzen, P.J.M., Linthorst HJM, 1994. A new class of tobacco chitinases homologous to bacterial exo-chitinases displays antifungal activity. *The Plant Journal* 5, 469-80.

Mesfin A, Smith KP, Dill-Macky R, Evans CK, Waugh R, Gustus CD, Muehlbauer GJ, 2003. Quantitative trait loci for Fusarium head blight resistance in barley detected in a two-rowed by six-rowed population. *Crop Science* 43, 307-18.

Mesterházy A, 2002. Role of deoxynivalenol in aggressiveness of *Fusarium graminearum* and *F. culmorum* and in resistance to Fusarium head blight. *European Journal of Plant Pathology* 108, 675-84.

Métraux JP, Streit L, Staub TH, 1988. A pathogenesis-related protein in cucumber is a chitinase. *Physiological and Molecular Plant Pathology* 33, 1-9.

Montalbini P, 1995. Effect of rust infection on purine catabolism enzyme levels in wheat leaves. *Physiological and Molecular Plant Pathology* 46, 275-92.

Okushima Y, Koizumi N, Kusano T, Sano H, 2000. Secreted proteins of tobacco cultured BY2 cells: Identification of a new member of pathogenesis-related proteins. *Plant Molecular Biology* 42, 479-88.

Pan Q, Wendel J, Fluhr R, 2000. Divergent evolution of plant NBS-LRR resistance gene homologues in dicot and cereal genomes. *Journal of Molecular Evolution* 50, 203-13.

Parniske M, Hammond-Kosack KE, Golstein C, Thomas CM, Jones DA, Harrison K, Wulff BB, Jones JD, 1997. Novel disease resistance specificities result from sequence exchange between tandemly repeated genes at the *Cf-4/9* locus of tomato. *Cell* 91, 821-32.

Parry DW, Jenkinson P, McLeod L, 1995. Fusarium ear blight (scab) in small grain cereals - A review. *Plant Pathology* 44, 207-38.

Paterson AH, Lin YR, Li Z, Schertz KF, Doebley JF, Pinson SRM, Liu SC, Stansel JW, Irvine JE, 1995. Convergent domestication of cereal crops by independent mutations at corresponding genetic loci. *Science* 269, 1714-8.

Pei ZM, Murata Y, Benning G, Thomine S, Klusener B, Allen GJ, Grill E, Schroeder JI, 2000. Calcium channels activated by hydrogen peroxide mediate abscisic acid signalling in guard cells. *Nature* 406, 731-4.

Pekkarinen AI, Jones BL, 2003(a). Purification and identification of barley (*Hordeum vulgare* L.) proteins that inhibit the alkaline serine proteinases of *Fusarium culmorum*. *Journal of Agricultural and Food Chemistry* 51, 1710-7.

Pekkarinen AI, Sarlin TH, Laitila AT, Haikara AI, Jones BL, 2003. *Fusarium* species synthesize alkaline proteinases in infested barley. *Journal of Cereal Science* 37, 349-56.

Peng M, Kuć J, 1992. Peroxidase-generated hydrogen peroxide as a source of antifungal activity in vitro and on tobacco leaf disks. *Phytopathology* 82, 696-9.

Piffanelli P, Zhou F, Casais C, Orme J, Jarosch B, Schaffrath U, Collins NC, Panstruga R, Schulze-Lefert P, 2002. The barley MLO modulator of defense and cell death is responsive to biotic and abiotic stress stimuli. *Plant Physiology* 129, 1076-85.

Pritsch C, Muehlbauer GJ, Bushnell WR, Somers DA, Vance CP, 2000. Fungal development and induction of defense response genes during early infection of wheat spikes by *Fusarium graminearum*. *Molecular Plant-Microbe Interactions* 13, 159-169.

Proctor RH, Hohn TM, McCormick SP, Desjardins AE, 1995. *Tri6* encodes an unusual zinc finger protein involved in regulation of trichothecene biosynthesis in *Fusarium sporotrichioides*. *Applied and Environmental Microbiology* 61, 1923-30.

Prom LK, Horsley RD, Steffenson BJ, Schwarz PB, 1999. Development of Fusarium head blight and accumulation of deoxynivalenol in barley sampled at different growth stages. *Journal of American Society of Brewing Chemists* 57, 60-3.

Rudd JC, Horsley RD, McKendry AL, Elias EM, 2001. Host plant resistance genes for fusarium head blight: Sources, mechanisms, and utility in conventional breeding systems. *Crop Science* 41, 620-7.

Ryals J, Uknes S, Ward E, 1994. Systemic acquired resistance. *Plant Physiology* 104, 1109-12.

Sambrook J, Russel DW, 2001. Molecular cloning: A laboratory manual. New York: Cold Spring Harbor Laboratory Press.

Saraste M, Sibbald PR, Wittinghofer A, 1990. The P-loop: A common motif in ATP- and GTP- binding protein. *Trends in Biochemical Science* 15, 430-4.

Sawada K, Hasegawa M, Tokuda L, Kameyama J, Kodama O, Kohchi T, Yoshida, K, Shinmyo A, 2004. Enhanced resistance to blast fungus and bacterial blight in transgenic rice constitutively expressing *OsSBP*, a rice homologue of mammalian selenium-binding proteins. *Bioscience, Biotechnology and Biochemistry* 68, 873-880.

Scheel D, 1998. Resistance response physiology and signal transduction. *Current Opinion in Plant Biology* 1, 305-10.

Schroeder HW, Christensen JJ, 1963. Factors affecting resistance of wheat to scab caused by *Gibberella zeae*. *Phytopathology* 53, 831-8.

Schwarz PB, Casper HH, Beattie S, 1995. Fate and development of naturally occurring *Fusarium* mycotoxins during malting and brewing. *Journal of Agricultural and Food Chemistry* 53, 121-7.

Simpson BB, Ogorzaly MC, 2001. *Economic Botany: Plants in our World*, (3rd Ed). New York: McGraw-Hill Publishers.

Skadsen RW, Hohn TM, 2004. Use of *Fusarium graminearum* transformed with *gfp* to follow infection patterns in barley and Arabidopsis. *Physiological and Molecular Plant Pathology* 64, 45-53.

Slater A, Scott N, Fowler M, 2004. *Plant biotechnology. The genetic manipulation of plants*. New York: Oxford University Press 163-74.

Slusarenko AJ, Fraser RSS, van Loon LC, 2000. *Mechanisms of resistance to plant diseases*. The Netherlands: Kluwer Academic Press.

Snoeijers SS, Pérez-García A, Joosten MHAJ, De Wit PJGM, 2000. The effect of nitrogen on disease development and gene expression in bacterial and fungal plant pathogens. *European Journal of Plant Pathology* 106, 493-506.

Somssich IE, Schmelzer E, Bollmann J, Hahlbrock K, 1986. Rapid activation by fungal elicitor of genes encoding pathogenesis-related proteins in cultured parsley cells. *Proceedings of the National Academy of Sciences* 83, 2427-30.

Spencer DM, 1978. The powdery mildews. London: Academic Press.

Steffenson BJ, 2003. Fusarium head blight of barley: Impact, epidemics, management, and strategies for identifying and utilizing genetic resistance. In *Fusarium Head Blight of Wheat and Barley* (Leonard, K.J. and Bushnell, W.R., eds), 241-95.

Steiner-Lange S, Fischer A, Boettcher A, Rouhara I, Liedgens H, Schmelzer E, Knogge W, 2003. Differential defense reactions in leaf tissues of barley in response to infection by *Rhynchosporium secalis* and to treatment with a fungal avirulence gene product. *Molecular Plant-Microbe Interactions* 16, 893-902.

Stintzi A, Heitz T, Prasad V, Wiedemann-Merdinoglu S, Kauffmann S, Geoffroy P, Legrand M, Fritig B, 1993. Plant 'pathogenesis-related' proteins and their role in defense against pathogens. *Biochimie* 75, 687-706.

Tag AG, Garifullina GF, Peplow AW, Ake C, Jr., Phillips TD, Hohn TM, Beremand MN, 2001. A novel regulatory gene, *Tri10*, controls trichothecene toxin production and gene expression. *Applied and Environmental Microbiology* 67, 5294-302.

Terras FRG, Schoofs HME, De Bolle FC, Van Leuven F, Rees SB, Vanderleyden J, Cammue BPA, Broekaert WF, 1992. Analyses of two novel classes of plant antifungal proteins from radish (*Raphanus sativus* L.) seeds. *The Journal of Biological Chemistry* 267, 15301-9.

Thuleau P, Schroeder JI, Ranjeva R, 1998. Recent advances in the regulation of plant calcium channels: Evidence for regulation by G-proteins, the cytoskeleton and second messengers. *Current Opinion in Plant Biology* 1, 424-7.

Urrea CA, Horsley RD, Steffenson BJ, Schwarz PB, 2002. Heritability of Fusarium head blight resistance and deoxynivalenol accumulation from barley accession CIho 4196. *Crop Science* 42, 1404-8.

van der Biezen, E.A., Jones JDG, 1998. Plant disease resistance proteins and the gene-for-gene concept. *Trends in Biochemical Science* 23, 454-6.

Vera P, Conejero V, 1988. Pathogenesis-related proteins of tomato: P-69 as an alkaline endoproteinase. *Plant Physiology* 87, 58-63.

Wang KLC, Li H, Ecker JR, 2002. Ethylene biosynthesis and signaling networks. *The Plant Cell* 14, S131-151.

Wang H, Liu D, Sun J, Zhang A, 2005. Asparagine synthetase gene *TaASN1* from wheat is up-regulated by salt stress, osmotic stress and ABA. *Journal of Plant Physiology* 162, 81-89.

Wei Y, Zhang Z, Andersen CH, Schmelzer E, Gregersen PL, Collinge DB, Smedegaard-Petersen V, Thordal-Christensen H, 1998. An epidermis/papilla-specific oxalate oxidase-like protein in the defence response of barley attacked by the powdery mildew fungus. *Plant Molecular Biology* 36, 101-12.

Wevelsiep L, Ruppig E, Knogge W, 1993. Stimulation of barley plasmalemma H⁺-ATPase by phytotoxic peptides from the fungal pathogen *Rhynchosporium secalis*. *Plant Physiology* 101, 297-301.

Wright AJ, Carver TLW, Thomas BJ, Fenwicks NID, Kunoh H, Nicholson RL, 2000. The rapid and accurate determination of germ tube emergence site by *Blumeria graminis* conidia. *Physiological and Molecular Plant Pathology* 57, 281-301.

Xing T, Higgins VJ, Blumwald E, 1997. Race-specific elicitors of *Cladosporium fulvum* promote translocation of cytosolic components of NADPH oxidase to the plasma membrane of tomato cells. *The Plant Cell* 9, 249-59.

Yang Z, Gilbert J, Fedak G, Somers DJ, 2005. Genetic characterization of QTL associated with resistance to Fusarium head blight in a doubled-haploid spring wheat population. *Genome* 48, 187-96.

Zhang Z, Collinge DB, Thordal-Christensen H, 1995. Germin-like oxalate oxidase, a H₂O₂-producing enzyme, accumulates in barley attacked by the powdery mildew fungus. *The Plant Journal* 8, 139-45.

Zhou W, Kolb FL, Bai G, Shaner G, Domier LL, 2002. Genetic analysis of scab resistance QTL in wheat with microsatellite and AFLP markers. *Genome* 45, 719-27.

Zhu H, Gilchrist L, Hayes P, Kleinhofs A, Kudrna D, Liu Z, Prom L, Steffenson B, Toojinda T, Vivar H, 1999. Does function follow form? Principal QTLs for Fusarium head blight (FHB) resistance are coincident with QTLs for inflorescence traits and plant height in a doubled-haploid population of barley. *Theoretical and Applied Genetics* 99, 1221-32.

