

Refereed Journal Articles

- Horvath, H., Rostoks, N., Brueggeman, R., Steffenson, B., Wettstein, D.V., and Kleinhofs, A. **2003**. Genetically engineered stem rust resistance in barley using the *Rpg1* gene. *PNAS*. 100:364-369.
- Wu, H.-L., Steffenson, B. J., Li, Y., Oleson, A. E., and Zhong, S. **2002**. Genetic variation in *Pyrenophora teres* detected by differential barley cultivars and RFLP markers. *Can. J. Plant Pathol.* 24: in press.
- Mammadov, J. A., Zwonitzer, J. C., Biyashev, R. M., Griffey, C. A., Jin, Y., Steffenson, B.J., and Saghai Maroof, M.A. **2002**. Molecular mapping of the leaf rust resistance gene *Rph5* in barley. *Crop. Sci.* 42: in press.
- Carlos A. Urrea, Richard D. Horsley, Brian J. Steffenson, and Paul B. Schwarz. **2002**. Heritability of *Fusarium* head blight resistance and deoxynivalenol accumulation from barley accession CIho 4196. *Crop Sci.* 42: 1404-1408.
- Jin, Y., and Steffenson, B. J. **2002**. Sources and genetics of crown rust resistance in barley. *Phytopathology* 92: 1064-1067
- Schwarz, P.B., Jones, B. L., and Steffenson, B.J. **2002**. Enzymes associated with *Fusarium* infection of barley. *J. Am. Soc. Brew. Chem.* 60:130-134.
- Brueggeman, R., Rostoks, N., Kudrna, D., Kilian, A., Han, F., Chen, J., Druka, A., Steffenson, B., and Kleinhofs, A. **2002**. The barley stem rust-resistance gene *Rpg1* is a novel disease resistance gene with homology to receptor kinases. *Proc. Natl. Acad. Sci. (USA)* 99:9328-9333.
- Rostoks, N., Zale, J. M., Soule, J., Brueggeman, R., Druka, A., Kudrna, D., Steffenson, B., and Kleinhofs, A. **2002**. A barley gene family homologous to the maize rust resistance gene *Rp1-D*. *Theor. Appl. Genet.* 104:1298-1306.
- Zhong, S., and Steffenson, B. J. **2002**. Identification and characterization of DNA markers associated with a locus conferring virulence on barley in the plant pathogenic fungus *Cochliobolus sativus*. *Theor. Appl. Genet.* 104:1049-1054.
- Zhong, S., Steffenson, B. J., Martinez, J. P., and Ciuffetti, L. M. **2002**. A molecular genetic map and electrophoretic karyotype of the plant pathogenic fungus *Cochliobolus sativus*. *Mol. Plant-Microbe Interact.* 15:481-492.
- Urrea, C. A., Horsley, R. D., Steffenson, B. J., and Frankowiak, J. D. **2002**. Registration of 6NDRFG-1 six-rowed barley germplasm line with partial *Fusarium* head blight resistance. *Crop Sci.* 42:675.
- Horsley, R. D., Frankowiak, J. D., Schwarz, P. B., and Steffenson, B. J. **2002**. Registration of 'Drummond' barley. *Crop Sci.* 42: 664-665.
- Zhong, S., and Steffenson, B. J. **2001**. Genetic and molecular characterization of mating type genes in *Cochliobolus sativus*. *Mycologia* 93:852-863.
- Zhong, S., and Steffenson, B. J. **2001**. Virulence and molecular diversity in *Cochliobolus sativus*. *Phytopathology* 91:469-476.
- Schwarz, P. B., Schwarz, J. G., Zhou, A., Prom, L. K., and Steffenson, B. J. **2001**. Effect of *Fusarium graminearum* and *F. poae* infection on barley and malt quality. *Monatsschr. Brauwissenschaft* 54:55-63.
- Edwards, M. C., Fetch, T. G. Jr., Schwarz, P. B., and Steffenson, B. J. **2001**. Effect of *Barley yellow dwarf virus* infection on yield and malting quality in barley. *Plant Dis.* 85: 202-207.
- Ma, Z., Steffenson, B. J., Prom, L. K., and Lapitan, N. L. V. **2000**. Mapping of quantitative trait loci for *Fusarium* head blight resistance in barley. *Phytopathology* 90:1079-1088.
- Druka, A., Kudrna, D., Han, F., Kilian, A., Steffenson, B., Frisch, D., Tomkins, J., Wing, R., and Kleinhofs, A. **2000**. Physical mapping of the barley stem rust resistance gene *rpg4*. *Mol. Gen. Genet.* 264:283-290.
- Graner, A., Streng, S., Drescher, A., Jin, Y., Borovkova, I., and Steffenson, B.J. **2000**. Molecular

mapping of the leaf rust resistance gene *Rph7* in barley. *Plant Breed.* 119:389-392.

Brooks, W. S., Griffey, C. A., Steffenson, B. J., and Vivar, H. E. **2000**. Genes governing resistance to *Puccinia hordei* in thirteen spring barley accessions. *Phytopathology* 90:1131-1136.

Dreiseitl, A., and Steffenson, B. J. **2000**. Postulation of leaf rust resistance genes in Czech and Slovak barley cultivars and breeding lines. *Plant Breed.* 119:211-214.

Han, F., Kilian, A., Chen, J.P., Kudrna, D., Steffenson, B., Yamamoto, K., Matsumoto, T., Sasaki, T., and Kleinhofs, A. **1999**. Sequence analysis of a rice BAC covering the syntenous barley *Rpg1* region. *Genome* 42:1071-1076.

Zhu, H., Gilchrist, L., Hayes, P., Kleinhofs, A., Kudrna, D., Liu, Z., Prom, L., Steffenson, B., Toojinda, T., and 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. *Theor. Appl. Genet.* 99:1221-1232.

Jin, Y., and Steffenson, B.J. **1999**. *Puccinia coronata* var. *hordei* var. nov. morphology and pathogenicity. *Mycologia* 91:877-884.

Salas, B., Steffenson, B.J., Casper, H.H., Tacke, B., Prom, L., Fetch, T.G., Jr., and Schwarz, P.B. **1999**. *Fusarium* species pathogenic to barley and their associated mycotoxins. *Plant Dis.* 83:667-674.

Fetch, T.G., Jr., and Steffenson, B.J. **1999**. Rating scales for assessing infection responses of barley infected with *Cochliobolus sativus*. *Plant Dis.* 83:213-217.

Prom, L.K., Horsley, R.D., Steffenson, B.J., and Schwarz, P.B. **1999**. Development of Fusarium head blight and accumulation of deoxynivalenol in barley sampled at different growth stages. *J. Am. Soc. Brew. Chem.* 57:60-63.

Weiland, J.J., Steffenson, B.J., Cartwright, R.D., and Webster, R.K. **1999**. Identification of molecular genetic markers in *Pyrenophora teres* f. *teres* associated with low virulence on 'Harbin' barley. *Phytopathology* 89:176-181.

Pickering, R.A., Steffenson, B.J., Hill, A.M., and Borovokova, I. **1998**. Association of leaf rust and powdery mildew resistance in a recombinant derived from a *Hordeum vulgare* x *H. bulbosum* hybrid. *Plant Breed.* 117:83-84.

Spaner, D., Shugar, L.P., Choo, T.M., Falak, I., Briggs, K.G., Legge, W.G., Falk, D.E., Ullrich, S.E., Tinker, N.A., Steffenson, B.J., and Mather, D.E. **1998**. Mapping of disease resistance loci in barley based on visual assessment of naturally occurring symptoms. *Crop. Sci.* 38:843-850.

Borovkova, I.G., Jin, Y., and Steffenson, B.J. **1998**. Chromosomal location and genetic relationship of leaf rust resistance genes *Rph9* and *Rph12* in barley. *Phytopathology* 88:76-80.

Valjavec-Gratian, M, and Steffenson, B.J. **1997**. Genetics of virulence in *Cochliobolus sativus* and resistance in barley. *Phytopathology* 87:1140-1143.

Valjavec-Gratian, M, and Steffenson, B.J. **1997**. Pathotypes of *Cochliobolus sativus* on barley in North Dakota. *Plant Dis.* 81:1275-1278.

Sun, Y., and Steffenson, B.J. **1997**. Effect of incubation time and temperature on the phenotypic expression of *rpg4* to *Puccinia graminis* f. sp. *tritici* in barley. *Can. J. Plant Pathol.* 19:25-29.

Horsley, R.D., Franckowiak, J.D., Schwarz, P.B., and Steffenson, B.J. **1997**. Registration of 'Foster' barley. *Crop Sci.* 37:1018.

Borovkova, I.G., Jin, Y., Steffenson, B.J., Kilian, A., Blake, T.K., and Kleinhofs, A. **1997**. Identification and mapping of a leaf rust resistance gene in barley line Q21861. *Genome* 40:236-241.

Kilian, A., Chen, J., Han, F., Steffenson, B., and Kleinhofs, A. **1997**. Towards map-based cloning of the barley stem rust resistance genes *Rpg1* and *rpg4* using rice as an intergenomic vehicle. *Plant Mol. Biol.* 35:187-195.

Edwards, M.C., and Steffenson, B.J. **1996**. Genetics and mapping of Barley Stripe Mosaic Virus resistance in barley. *Phytopathology* 86:184-187.

Steffenson, B.J., Hayes, P.M., and Kleinhofs, A. **1996**. Genetics of seedling and adult plant resistance to net blotch (*Pyrenophora teres* f. *teres*) and spot blotch (*Cochliobolus sativus*) in

barley. *Theor. Appl. Genet.* 92:552-558.

Hayes, P., Prehn, D., Vivar, H., Blake, T., Comeau, A., Henry, I., Johnston, M., Jones, B., Steffenson, B., St. Pierre, C.A., and Chen, F. **1996**. Multiple disease resistance loci and their relationship to agronomic and quality loci in a spring barley population. *JQTL* volume 2: <http://probe.nalusda.gov:8000/otherdocs/jqtl/jqtl1995-02/jqtl16r2.html>.

Sun, Y., Steffenson, B.J., and Jin, Y. **1996**. Genetics of resistance to *Puccinia graminis* f. sp. *secalis* in barley line Q21861. *Phytopathology* 86:1299-1302.

Jin, Y., Cui, G.H., Steffenson, B.J., and Franckowiak, J.D. **1996**. New leaf rust resistance genes in barley and their allelic and linkage relationships with other *Rph* genes. *Phytopathology* 86:887-890.

Tinker, N.A., Mather, D.E., Rossnagel, B.G., Kasha, K.J., Kleinhofs, A., Hayes, P.M., Falk, D.E., Ferguson, T., Shugar, L., Legge, W.G., Irvine, R.B., Choo, T.M., Briggs, K.G., Ullrich, S.E., Franckowiak, J.D., Blake, T.K., Graf, R.J., Dofing, S.M., Saghai Maroof, M.A., Scoles, G.J., Hoffman, D., Dahleen, L.S., Kilian, A., Chen, F., Biyashev, R.M., Kudrna, D.A., and Steffenson, B.J. **1996**. Regions of the genome that affect agronomic performance in two-row barley. *Crop Sci.* 36:1053-1062.

Kilian, A., Kudrna, D.A., Kleinhofs, A., Yano, M., Kurata, N., Steffenson, B., and Sasaki, T. **1995**. Rice-barley synteny and its applications to saturation mapping of the barley *Rpg1* region. *Nucleic Acids Res.* 23:2729-2733.

Steffenson, B.J., Jin, Y., Rossnagel, B.G., Rasmussen, J., and Kao, K.N. **1995**. Genetics of multiple disease resistance in a doubled haploid population of barley. *Plant Breed.* 114:50-54.

Borovkova, I.G., Steffenson, B.J., Jin, Y., Rasmussen, J.B., Kilian, A., Kleinhofs, A., Rossnagel, B.G., and Kao, K.N. **1995**. Identification of molecular markers linked to the stem rust resistance gene *rpg4* in barley. *Phytopathology* 85:181-185.

Jin, Y., Steffenson, B.J., and Bockelman, H.E. **1995**. Evaluation of cultivated and wild barley for resistance to pathotypes of *Puccinia hordei* with wide virulence. *Genet. Res. Crop Evol.* 42:1-6.

Fetch, T.G., Jr., and Steffenson, B.J. **1994**. Identification of *Cochliobolus sativus* isolates expressing differential virulence on two-rowed barley genotypes from North Dakota. *Can. J. Plant Pathol.* 16:202-206.

Jin, Y., and Steffenson, B.J. **1994**. Inheritance of resistance to *Puccinia hordei* in cultivated and wild barley. *J. Hered.* 85:451-454.

Kilian, A., Steffenson, B.J., Saghai Maroof, M.A., and Kleinhofs, A. **1994**. RFLP markers tightly linked to the durable stem rust resistance gene *Rpg1* in barley. *Mol. Plant-Microbe Interact.* 7:298-301.

Jin, Y., Steffenson, B.J., and Miller, J.D. **1994**. Inheritance of resistance to pathotypes QCC and MCC of *Puccinia graminis* f. sp. *tritici* on barley line Q21861 and temperature effects on the expression of resistance. *Phytopathology* 84:452-455.

Jin, Y., Steffenson, B.J., and Fetch, T.G., Jr. **1994**. Sources of resistance to pathotype QCC of *Puccinia graminis* f. sp. *tritici* in barley. *Crop Sci.* 34:285-288.

Steffenson, B.J., Jin, Y., and Griffey, C.A. **1993**. Pathotypes of *Puccinia hordei* with virulence for the barley leaf rust resistance gene *Rph7* in the United States. *Plant Dis.* 77:867-869.

Kleinhofs, A., Kilian, A., Saghai Maroof, M.A., Biyashev, R.M., Hayes, P., Chen, F.Q., Lapitan, N., Fenwick, A., Blake, T.K., Kanazin, V., Ananiev, E., Dahleen, L., Kudrna, D., Bollinger, J., Knapp, S.J., Liu, B., Sorrells, M., Heun, M., Franckowiak, J.D., Hoffman, D., Skadsen, R., and Steffenson, B.J. **1993**. A molecular, isozyme and morphological map of the barley (*Hordeum vulgare*) genome. *Theor. Appl. Gen.* 86:705-712.

Steffenson, B.J., Miller, J.D., and Jin, Y. **1993**. Detection of the stem rust resistance gene *Rpg1* in barley seedlings. *Plant Dis.* 77:626-629.

Brown, M.P., Steffenson, B.J., and Webster, R.K. **1993**. Host range of *Pyrenophora teres* f. *teres* isolates from California. *Plant Dis.* 77:942-947.

Jin, Y., Steffenson, B.J., and Franckowiak, J.D. **1993**. Linkage between the *Rpg1* gene for stem

rust resistance and the *f5* locus on barley chromosome 1. *Crop Sci.* 33:642-643.

Jin, Y., Statler, G.D., Franckowiak, J.D., and Steffenson, B.J. **1993**. Linkage between leaf rust resistance genes and morphological markers in barley. *Phytopathology* 83:230-233.

Jin, Y., Steffenson, B.J., Oberthur, L.E., and Baenziger, P.S. **1992**. *Puccinia coronata* on barley. *Plant Dis.* 76:1283.

Steffenson, B.J. **1992**. Analysis of durable resistance to stem rust in barley. *Euphytica* 63:153-167.

Steffenson, B.J., and Webster, R.K. **1992**. Quantitative resistance to *Pyrenophora teres* f. *teres* in barley. *Phytopathology* 82:407-411.

Steffenson, B.J., and Webster, R.K. **1992**. Pathotype diversity of *Pyrenophora teres* f. *teres* on barley. *Phytopathology* 82:170-177.

Steffenson, B.J., Webster, R.K., and Jackson, L.F. **1991**. Reduction in yield loss by using incomplete resistance to *Pyrenophora teres* f. *teres* in barley. *Plant Dis.* 75:96-100.

Griesbach, J.A., Steffenson, B.J., Brown, M.P., Falk, B.W., and Webster, R.K. **1990**. Infection of gramineous species by Barley Yellow Dwarf Viruses in California. *Crop Sci.* 30:1173-1177.

Steffenson, B.J., and Wilcoxson, R.D. **1987**. Receptivity of barley to *Puccinia graminis* f. sp. *tritici*. *Can. J. Plant Pathol.* 9:36-40.

Steffenson, B.J., Wilcoxson, R.D., and Roelfs, A.P. **1985**. Resistance of barley to *Puccinia graminis* f. sp. *tritici* and *Puccinia graminis* f. sp. *secalis*. *Phytopathology* 75:1108-1111.

Steffenson, B.J., Wilcoxson, R.D., and Roelfs, A.P. **1984**. Inheritance of resistance to *Puccinia graminis* f. sp. *secalis* in barley. *Plant Dis.* 68:762-763.

Steffenson, B.J., Wilcoxson, R.D., Watson, I.A., and Roelfs, A.P. **1983**. Physiologic specialization of *Puccinia graminis* f. sp. *secalis* in North America. *Plant Dis.* 67:1262-1264.