

GREGORY L. TYLKA

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EDUCATION

Ph.D. Degree, University of Georgia, Athens, Georgia. 1990, Summa Cum Laude. Major: Plant Pathology. Major professor: Dr. Richard S. Hussey. Dissertation title: The interactions of vesicular-arbuscular mycorrhizal fungi with *Heterodera glycines* and soil actinomycetes on soybean.

M.S. Degree, California University of Pennsylvania, California, Pennsylvania. 1985, Summa Cum Laude. Major: Biology. Major Professor: Dr. Barry B. Hunter. Thesis title: The isolation, quantification, and possible integrated control of *Cylindrocladium* species from Mont Alto and Penn forest tree nursery soils.

B.S. Degree, California University of Pennsylvania, California, Pennsylvania. 1983, Magna Cum Laude. Advisor: Dr. Samuel K. Hood. Major: Biology.

EMPLOYMENT RECORD

July 2000 to present: Professor, Department of Plant Pathology and Microbiology, Iowa State University, Ames, Iowa. Responsibilities include graduate teaching and extension efforts concerning all plant-parasitic nematode species and research on effects of cultural practices and soybean resistance on soybean cyst nematode, *Heterodera glycines*, population densities and soybean yield suppression and the interactions of soybean insect and weed pests with soybean cyst nematode.

July 2003 to September 2010: Coordinator (half time), Corn and Soybean Initiative, College of Agriculture and Life Sciences, Iowa State University, Ames, Iowa. Responsibilities include providing planning, organization, and leadership to coordinate applied research on corn and soybean production in Iowa and the transfer of science-based crop production information to Iowa corn and soybean growers.

July 1995 to 2000: Associate Professor, Department of Plant Pathology, Iowa State University, Ames, Iowa. Responsibilities include extension efforts concerning all plant-parasitic nematode species and research on effects of cultural practices and soybean resistance and tolerance on soybean cyst nematode, *Heterodera glycines*, population densities and soybean yield suppression. Also investigating stimulation and inhibition of hatching of soybean cyst nematode eggs and the interactions of soybean insect and weed pests with soybean cyst nematode.

February 1990 to June 1995: Assistant Professor, Department of Plant Pathology, Iowa State University, Ames, Iowa. Primary responsibilities included research on the effects of cultural practices and soybean resistance and tolerance on soybean cyst nematode, *Heterodera glycines*,

EMPLOYMENT RECORD (continued)

and soybean yield suppression. Also investigated induced hatching of soybean cyst nematode eggs and the influence of soybean insect and weed pests on soybean cyst nematode. Additionally, considerable extension and teaching responsibilities were components of this position.

August 1988 to December 1989: Half-time laboratory technician for Dr. Richard S. Hussey, Department of Plant Pathology, University of Georgia, Athens, Georgia. Participated in a research program utilizing monoclonal antibodies in immunocytochemical studies of the nature and function of disease-inducing secretions of the root-knot nematode, *Meloidogyne incognita*. Investigations were being conducted on the molecular basis of pathogenesis by identifying and characterizing the esophageal gland secretions within juvenile and adult nematodes that modify recipient host root tissue during nematode parasitism.

September 1985 to December 1989: Graduate Research Assistant, Department of Plant Pathology, University of Georgia, Athens, Georgia. Conducted field, greenhouse and laboratory investigations on the influence of vesicular-arbuscular mycorrhizal fungi (*Gigaspora* and *Glomus*) upon development and reproduction of the soybean cyst nematode, *Heterodera glycines*, on soybean. Also investigated effect of soil inhabiting *Streptomyces* species on mycorrhizal fungal spore germination and penetration and colonization of soybean roots.

September 1983 to August 1985: Graduate Research Assistant, Department of Biological and Environmental Sciences, California University of Pennsylvania, California, Pennsylvania. This project, partially funded by the Pennsylvania Bureau of Forestry, involved soil microbiological research into the biology of *Cylindrocladium* species and their infection of conifer seedling roots in Pennsylvania's State Forest Tree Nurseries. Served as teaching assistant for undergraduate Principles of Biology and Scientific Photography courses and instructor of Microscopy and Photography courses for the Summer Academy for Gifted Students (1984 and 1985).

PROFESSIONAL AND HONORARY ASSOCIATIONS

American Phytopathological Society
American Soybean Association
Beta Beta Beta
Iowa Corn Growers Association

Iowa Soybean Association
Sigma Xi
Society of Nematologists

AWARDS

Regents Faculty Excellence Award, Board of Regents, State of Iowa (2010)

Educational Materials Award of Excellence for Computer Software Programs, American Society of Agronomy, for computer training module for certified crop advisors on biology and management of corn nematodes (2009)

AWARDS (continued)

Educational Materials Award of Excellence for Printed Materials, American Society of Agronomy, for special issue of the Integrated Crop Management Newsletter (2007)

Educational Materials Award of Excellence for Computer Software Programs, American Society of Agronomy, for computer training module for certified crop advisors on biology and management of the soybean cyst nematode (2006)

Dean's Citation for Extraordinary Contributions to the College of Agriculture (2005)

Outstanding Individual Achievement Award, Iowa State University Extension (2002)

Meritorious Service Extension Education Award, United Soybean Board (2000)

Excellence in Extension Award, American Phytopathological Society (1999)

Meritorious Service Award, Iowa State University Extension (1999)

Novartis Crop Protection Award, Society of Nematologists (1999)

Meritorious Service Production Research Award, United Soybean Board (1998)

Outstanding Alumnus Award, Beta Beta Beta, California University of Pennsylvania (1992)

GRANTS (last 5 years, 2009-present)

Toward increased efficacy of soybean cyst nematode management tools. **G.L. Tylka** and S. Pandey. Funded by the Center for Arthropod Management Technologies for \$120,00 total over two years (2014-2015).

Development of multiple pest resistant soybeans for breeding and research purposes using field and molecular tools. A.K. Singh, M. O'Neal, **G. Tylka**, G. MacIntosh, and A. Singh. Funded by the Iowa Soybean Association for \$310,348 over three years (2013-2016).

Enhancing soybean yield through strategic use of soybean seed treatments for seedling disease and insect pest management. A. Robertson, G. Munkvold, **G. Tylka**, and E. Hodgson. Funded by the Iowa Soybean Association for \$409,456 over three years (2013-2016).

Exploring soybean aphid and soybean cyst nematode interactions for improved integrated management in Iowa. M.E. O'Neal, **G.L. Tylka**, G. MacIntosh, E.W. Hodgson, and M. McCarville. Funded by the Iowa Soybean Association for \$339,417 over three years (2013-2016).

Developing an integrated management and communication plan for sudden death syndrome. D. Mueller, L. Leandro, C. Bradley, M. Chilvers, **G. Tylka**, K. Wise, S. Cianzio, J. Faghihi, A. Tenuta, V. Ferris, D. Malvick, A. Fakhoury, and G. Hartman. Funded by the North Central Soybean Research Program for \$500,000 over three years (2013 – 2015).

GRANTS (continued)

Modifying *Bradyrhizobium japonicum* to enhance nodulated soybean disease resistance. R. Peters, L. Leandro, A. Robertson, and **G. Tylka**. Funded by the Iowa Soybean Association for \$246,266 over two years (2013-2015).

Continuation of assessment of nematode control and yield of SCN-resistant soybean varieties in response to different soybean cyst nematode populations (HG Types). **G. Tylka**. Funded by the Iowa Soybean Association for \$444,129 over three years (2012–2015).

Determining soybean pest and pesticide interactions as a means to optimize soybean yield, E. Hodgson, A. Gassmann, and **G. Tylka**. Funded by the Iowa Soybean Association for \$201,206 over three years (2012–2015).

Characterization of the mechanisms involved in the SDS-SCN interaction to develop soybean lines with resistance to SDS and to SCN, L. Leandro, **G. Tylka**, S. Ciazio, and O. Radwan, S.R. Ciazio. Funded by the Iowa Soybean Association for \$127,251 over two years (2012–2014).

Exploring soybean aphid and soybean cyst nematode interactions for improved integrated management in Iowa. M.E. O’Neal, **G.L. Tylka**, G. MacIntosh, E.W. Hodgson, and M. McCarville. Funded by the Iowa Soybean Association for \$339,417 over three years (2011-2014).

Assessing nematode control and yield of SCN-resistant soybean varieties in response to different soybean cyst nematode populations (HG types), **G. Tylka**. Funded by the Iowa Soybean Association for \$613,720 for three years (2010-2012).

Determining the impact of multiple pests on soybean yield and grain composition, G. MacIntosh, M. O’Neal, **G. Tylka**, P. Pedersen, and F. Avendano. Funded by the Iowa Soybean Association for \$300,326 for three years (2007-2010).

Increasing Iowa soybean profitability by renewing interest in managing the soybean cyst nematode, **G.L. Tylka**. Funded by the Iowa Soybean Association for \$517,199 for four years (2006-2010).

Improving soybean profitability in Iowa by reducing the hidden effects of brown stem rot and its interaction with the soybean cyst nematode, G. Tabor and **G.L. Tylka**. Funded by the Iowa Soybean Association for \$216,760 over three years (2006 to 2009).

INDUSTRY RESEARCH CONTRACTS

AMVAC
BASF Plant Sciences
Bayer Crop Sciences
Bushvale Seeds

CENEX/Land O’Lakes
Chemtura
DeKalb Genetics Corporation
DM Crop Research, Inc.

INDUSTRY RESEARCH CONTRACTS (continued)

Divergence Company	Novartis Crop Protection, Inc.
DuPont Crop Protection	Pioneer Hi-Bred International, Inc.
Evolutionary Genomics Inc.	Stine Seed Company
JGL, Inc.	Stoller Enterprises Inc
LiphaTech, Inc.	Syngenta Crop Protection
MBS Genetics	TJ Technologies, Inc.
Monsanto	Valent

AGENCIES AND ORGANIZATIONS ADVISED

BASF	LiphaTech, Inc.
Bayer CropScience	Monsanto
DNA Plant Technologies	North Central Soybean Research Program
Garst Seeds	Novartis Crop Protection, Inc.
Illinois Department of Agriculture	Pioneer Hi-Bred International, Inc.
Iowa Department of Agriculture	Syngenta
Iowa Soybean Association	United Soybean Board

PUBLICATIONS

I. Refereed research articles:

Tylka, G.L. and C.C. Marett. Distribution of the soybean cyst nematode (*Heterodera glycines*) in the United States and Canada: 1954 to 2014. Plant Health Progress (accepted).

McCarville, M.T., D.H. Soh, **G.L. Tylka**, and M.E. O'Neal. 2014. Aboveground feeding by soybean aphid, *Aphis glycines*, affects soybean cyst nematode, *Heterodera glycines*, reproduction belowground. PLoS ONE 9(1): e86415. doi:10.1371/journal.pone.0086415.

McCarville, M.T., C. Kanobe, M. O'Neal, G. MacIntosh and **G.L. Tylka**. 2012. Measuring the yield and fatty-acid response of soybean cultivars with seed oil low in linolenic acid to multiple biotic stresses. Crop Protection 42:210-216.

McCarville, M.T., M. O'Neal, **G.L. Tylka**, C. Kanobe and G. MacIntosh. 2012. A nematode, fungus, and aphid interact via a shared host plant: implications for soybean management. Entomologia Experimentalis et Applicata 143:55-66, doi: 10.1111/j.1570-7458.2012.01227.x.

Tylka, G.L., A.J. Sisson, L.C. Jesse, J. Kennicker and C.C. Marett. 2011. Testing for plant-parasitic nematodes that feed on corn in Iowa 2000-2010. Online. Plant Health Progress doi:10.1094/PHP-2011-1205-01-RS.

PUBLICATIONS (continued)

- Tylka, G.L.**, T.C. Todd, T.L. Niblack, A.E. MacGuidwin, and T. Jackson. 2011. Sampling for plant-parasitic nematodes in corn strip trials comparing nematode management products. *Plant Health Progress* doi:10.1094/PHP-2011-0901-01-DG.
- Rotundo, J.L., **G.L. Tylka**, and P. Pedersen. 2010. Source of resistance affects soybean yield, yield components, and biomass accumulation in *Heterodera glycines*-infested fields. *Crop Science* 50:2565–2574.
- Pedersen, P., **G.L. Tylka**, A.P. Mallarino, A.E. MacGuidwin, N.C. Koval, and C.R. Grau. 2010. Correlation between soil pH, *Heterodera glycines* population densities, and soybean yield. *Crop Science* 50:1458–1464, doi: 10.2135/cropsci2009.08.0432.
- Niblack, T.L., **G.L. Tylka**, P. Arelli, J. Bond, B. Diers, P. Donald, J. Faghihi, V.R. Ferris, K. Gallo, R.D. Heinz, H. Lopez-Nicora, R. Von Qualen, T. Welacky, and J. Wilcox. 2009. A standard greenhouse method for assessing soybean cyst nematode resistance in soybean: SCE08 (Standardized Cyst Evaluation 2008). Online. *Plant Health Progress* doi:10.1094/PHP-2009-0513-01-RV.
- Rogovsa, N., F.W. Blackmer, and **G.L. Tylka**. 2009. Soybean yield and soybean cyst nematode densities related to soil pH, soil carbonate concentrations, and alkalinity stress index. *Agronomy Journal* 101:1019-1026 (also online, doi:10.2134/agronj2008.0086x).
- Studham, M., G.C. MacIntosh, F. Avendaño, D. Soh, and **G.L. Tylka**. 2009. The soybean resistance gene *Rag1* does not protect against soybean cyst and root-knot nematodes. Online. *Plant Health Progress* doi:10.1094/PHP-2009-0401-01-BR.
- Charlson, D.V., K.R. Harkins, and **G.L. Tylka**. 2008. Relationship between juvenile hatching and acridine orange fluorescence of *Heterodera glycines* eggs. *Nematology* 10:603-610.
- Zasada, I.A., F. Avendano, Y. Li, T. Logan, H. Melakeberhan, S. Koenning, and **G.L. Tylka**. 2008. Potential of an alkaline-stabilized biosolid to manage nematodes: case studies on soybean cyst and root-knot nematodes. *Plant Disease* 92:4-13.
- Gavassoni, W.L., **G.L. Tylka**, and G.P. Munkvold. 2007. Relationships among tillage practices, dissemination, and spatial patterns of *Heterodera glycines* and soybean yield. *Plant Disease* 91:973-978.
- Tabor, G.M., **G.L. Tylka**, and C.R. Bronson. 2007. Genotypes A and B of *Cadophora gregata* differ in ability to colonize susceptible soybean. *Plant Disease* 91:574-580.
- Tabor, G.M., **G.L. Tylka**, and C.R. Bronson. 2006. Soybean stem colonization by genotypes A and B of *Cadophora gregata* increases with increasing population densities of *Heterodera glycines*. *Plant Disease* 90:1297-1301.

PUBLICATIONS (continued)

- Donald, P.A., P.E. Pierson, S.K. St. Martin, P.R. Sellers, G.R. Noel, A.E. MacGuidwin, J. Faghihi, V.R. Ferris, C.R. Grau, D.J. Jardine, H. Melakeberhan, T.L. Niblack, W.C. Stienstra, **G.L. Tylka**, T.A. Wheeler, and D.S. Wysong. 2006. Assessing *Heterodera glycines*-resistant and susceptible cultivar yield response. *Journal of Nematology* 38:76-82.
- Tabor, G.M., S.R. Cianzio, **G.L. Tylka**, R. Roorda, and C.R. Bronson. 2006. A new greenhouse method to assay soybean resistance to brown stem rot. *Plant Disease*: 90:1186-1194.
- Leon, R., M.D.K. Owen, D. Soh, and **G.L. Tylka**. 2005. Absence of interactive responses of early soybean growth to soybean cyst nematode, post-emergence herbicides, and soil pH and texture. *Weed Technology* 19:847-854.
- Charlson, D.V. and **G.L. Tylka**. 2003. *Heterodera glycines* cyst components and surface disinfestation affect *H. glycines* hatching. *Journal of Nematology* 35:458-464.
- Tabor, G.M., **G.L. Tylka**, S.C. Cianzio, and C.R. Bronson. 2003. Resistance to *Phialophora gregata* is expressed in the stems of resistant soybeans. *Plant Disease* 87:970-976.
- Tabor, G.M., **G.L. Tylka**, J.E. Behm, and C.R. Bronson. 2003. *Heterodera glycines* infection increases incidence and severity of brown stem rot of soybeans. *Plant Disease* 87:655-661.
- Wang, J., T.L. Niblack, J.N. Tremaine, W.J. Wiebold, **G.L. Tylka**, C.C. Marett, G.R. Noel, O. Myers, and M.E. Schmidt. 2003. The soybean cyst nematode reduces soybean yield without causing obvious symptoms. *Plant Disease* 87:623-628.
- Fallick, J.B., W.D. Batchelor, **G.L. Tylka**, T.L. Niblack, and J.O. Paz. 2002. Coupling soybean cyst nematode damage to CROPGRO-Soybean. *Transactions of the American Society of Agricultural Engineers* 45:433-441.
- Niblack, T.L., P.R. Arelli, G.R. Noel, C.H. Opperman, J.H. Orf, D.P. Schmitt, J.G. Shannon and **G.L. Tylka**. 2002. A new classification scheme for genetically diverse populations of *Heterodera glycines*. *Journal of Nematology* 34:279-288.
- Nutter, F.W., **G.L. Tylka**, J. Guan, A.J.D. Moreira, C.C. Marett, T.R. Rosburg, J.P. Basart, and C.S. Chong. 2002. Use of remote sensing to detect soybean cyst nematode-induced plant stress. *Journal of Nematology* 34:222-231.
- Perry, R.N., J. Beane, C.C. Marett, and **G.L. Tylka**. 2002. Comparison of the rate of embryonic development of *Globodera rostochiensis* and *G. pallida* using flow cytometric analysis. *Nematology* 4:553-555.
- Gavassoni, W.L., **G.L. Tylka**, and G.P. Munkvold. 2001. Relationship between tillage and spatial patterns of *Heterodera glycines*. *Phytopathology* 91:534-545.

PUBLICATIONS (continued)

- Paz, J.O., W.D. Batchelor, **G.L. Tylka**, and R.G. Hartzler. 2001. A modeling approach to quantify the effects of spatial soybean yield limiting factors. Transactions of the American Society of Agricultural Engineers 44:1329-1334.
- Paz, J.O., W.D. Batchelor, and **G.L. Tylka**. 2001. Method to use crop growth models to estimate potential return for variable-rate management in soybeans. Transactions of the American Society of Agricultural Engineers 44:1335-1341.
- Buckelew, L.D., L.P. Pedigo, H.M. Mero, M.D.K. Owen, and **G.L. Tylka**. 2000. Effects of weed management systems on canopy insects in herbicide-resistant soybeans. Journal of Economic Entomology 93:1437-1443.
- Wang, J., P.A. Donald, T.L. Niblack, G.W. Bird, J. Faghihi, J.M. Ferris, D.J. Jardine, C. Grau, P.E. Lipps, A.E. MacGuidwin, H. Melakeberhan, G.R. Noel, P. Pierson, R.M. Reidel, P.R. Sellers, W.C. Stienstra, T.C. Todd, **G.L. Tylka**, and D.S. Wysong. 2000. Soybean cyst nematode reproduction in the north central United States. Plant Disease 84:77-82.
- Workneh, F., X.B. Yang, and **G.L. Tylka**. 1999. Soybean brown stem rot, *Phytophthora sojae*, and *Heterodera glycines* affected by soil texture and tillage relations. Phytopathology 89:844-850.
- Workneh, F., **G.L. Tylka**, X.B. Yang, J. Faghihi, and J.M. Ferris. 1999. Regional assessment of soybean brown stem rot, *Phytophthora sojae*, and *Heterodera glycines* using area-frame sampling: prevalence and effects of tillage. Phytopathology 89:204-211.
- Workneh, F., X.B. Yang, and **G.L. Tylka**. 1998. Effect of tillage practices on vertical distribution of *Phytophthora sojae*. Plant Disease 82:1258-1263.
- Levene, B.C., M.D.K. Owen, and **G.L. Tylka**. 1998. Influence of herbicide application to soybean on soybean cyst nematode egg hatching. Journal of Nematology 30:347-352.
- Levene, B.C., M.D.K. Owen, and **G.L. Tylka**. 1998. Response of soybean cyst nematodes and soybeans (*Glycine max*) to herbicides. Weed Science 46:264-270.
- Thompson, J.M., and **G.L. Tylka**. 1997. Differences in hatching of *Heterodera glycines* egg-mass and encysted eggs in vitro. Journal of Nematology 29:315-321.
- Kraus, G.A., S. Vander Louw, **G.L. Tylka**, and D.H. Soh. 1996. The synthesis and testing of compounds that inhibit soybean cyst nematode egg hatch. Journal of Agricultural and Food Chemistry 44:1548-1550.
- Shapiro, D.I., **G.L. Tylka**, and L.C. Lewis. 1996. Effects of fertilizers on virulence of *Steinernema carpocapsae*. Applied Soil Ecology 3:27-34.

PUBLICATIONS (continued)

- Behm, J.E., **G.L. Tylka**, T.L. Niblack, W.J. Wiebold, and P.A. Donald. 1995. Effects of zinc fertilization of corn on hatching of *Heterodera glycines* in soil. *Journal of Nematology* 27:164-171.
- Shapiro, D.I., **G.L. Tylka**, E.C. Berry, and L.C. Lewis. 1995. Effects of earthworms on the dispersal of *Steinernema* spp. *Journal of Nematology* 27:21-28.
- Browde, J.A., L.P. Pedigo, M.D.K. Owen, **G.L. Tylka**, and B.C. Levene. 1994. Growth of soybean stressed by nematodes, herbicides, and simulated insect defoliation. *Agronomy Journal* 86:968-974.
- Browde, J.A., L.P. Pedigo, M.D.K. Owen, and **G.L. Tylka**. 1994. Soybean yield and pest management as influenced by nematodes, herbicides, and defoliating insects. *Agronomy Journal* 86:601-608.
- Browde, J.A., **G.L. Tylka**, L.P. Pedigo, and M.D.K. Owen. 1994. A method for infesting small field plots with *Heterodera glycines*. *Agronomy Journal* 86:585-587.
- Browde, J.A., **G.L. Tylka**, L.P. Pedigo, and M.D.K. Owen. 1994. Responses of *Heterodera glycines* populations to a postemergence herbicide mix and simulated insect defoliation. *Journal of Nematology* 26:498-504.
- Kraus, G.A., B. Johnston, A. Kongsjahju, and **G.L. Tylka**. 1994. The synthesis and evaluation of compounds that affect soybean cyst nematode egg hatch. *Journal of Agricultural and Food Chemistry* 42:1839-1840.
- Wong, A.T.S. and **G.L. Tylka**. 1994. Eight nonhost weed species of *Heterodera glycines* in Iowa. *Plant Disease* 78:365-367.
- Tylka, G.L.**, T.L. Niblack, T.C. Walk, K.R. Harkins, L. Barnett, and N.K. Baker. 1993. Flow cytometric analysis and sorting of *Heterodera glycines* eggs. *Journal of Nematology* 25:596-602.
- Wong, A.T., **G.L. Tylka**, and R.G. Hartzler. 1993. Effects of eight herbicides on in vitro hatching of *Heterodera glycines*. *Journal of Nematology* 25:578-584.
- Tylka, G.L.**, R.S. Hussey, and R.W. Roncadori. 1991. Axenic germination of vesicular-arbuscular mycorrhizal fungi: effects of selected *Streptomyces* species. *Phytopathology* 81:754-759.
- Tylka, G.L.**, R.S. Hussey, and R.W. Roncadori. 1991. Interactions of vesicular-arbuscular mycorrhizal fungi, phosphorus, and *Heterodera glycines* on soybean. *Journal of Nematology* 23:122-133.

PUBLICATIONS (continued)

II. Non-refereed, online research articles:

Tylka, G.L., G.D. Gebhart, and C.C. Marett. 2006. Iowa 2005 soybean cyst nematode-resistant soybean variety trial results. Crop Management (<http://www.plantmanagementnetwork.org/pub/cm/trials/2005/soy/Tylka.xls>).

Tylka, G.L., G.D. Gebhart, and C.C. Marett. 2006. Iowa 2004 soybean cyst nematode-resistant soybean variety trial results. Crop Management (<http://www.plantmanagementnetwork.org/pub/cm/trials/2004/soy/Tylka.xls>).

Tylka, G.L., G.D. Gebhart, and C.C. Marett. 2006. Iowa 2003 soybean cyst nematode-resistant soybean variety trial results. Crop Management (<http://www.plantmanagementnetwork.org/pub/cm/trials/2003/soy/Tylka.xls>).

Tylka, G.L., G.D. Gebhart, and C.C. Marett. 2003. Iowa 2002 soybean cyst nematode-resistant soybean variety trial results. Crop Management (<http://www.plantmanagementnetwork.org/pub/cm/trials/2002/soy/Tylka.xls>).

Tylka, G.L., G.D. Gebhart, and C.C. Marett. 2003. Iowa 2001 soybean cyst nematode-resistant soybean variety trial results. Crop Management (<http://www.plantmanagementnetwork.org/pub/cm/trials/2001/soy/Tylka.xls>).

III. Miscellaneous refereed online journal articles:

Robertson, A. and **G.L. Tylka**. 2007. Building the "Rust Fast Track System" for identifying Asian soybean rust in Iowa. Journal of Extension 45(3) Article 3IAW7. www.joe.org/joe/2007june/iw7.shtml.

Tylka, G.L. and C.A. Jasalavich. 2001. Free-living and plant-parasitic nematodes (roundworms). The Plant Health Instructor. DOI: 10.1094/PHI-K-2001-0409-01.

Davis, E.L. and **G.L. Tylka**. 2000. Soybean cyst nematode disease. The Plant Health Instructor. DOI: 10.1094/PHI-I-2000-0725-01.

IV. Book chapters:

Niblack, T.L., K.N. Lambert, and **G.L. Tylka**. 2006. A model plant pathogen from the kingdom Animalia: *Heterodera glycines*, the soybean cyst nematode. Annual Review of Phytopathology 44:283-303.

Kraus, G.A., **G.L. Tylka**, S. Van der Louw, and P.K. Choudhury. 2004. Chapter 11, Management of the soybean cyst nematode by using a biorational strategy, pp. 161-172 in Agricultural Applications in Green Chemistry, W.M. Nelson, ed., American Chemical Society, Washington, DC.

PUBLICATIONS (continued)

- Tylka, G.L.** 2004. Management of nematode diseases: options in Encyclopedia of Plant and Crop Science. R.M. Goodman, ed., Marcel Dekker, Inc., New York.
- Niblack, T.L., **G.L. Tylka**, and R.D. Riggs. 2004. Chapter 16, Nematode pathogens of soybean, pp. 821-851 in Soybean Monograph, 3rd Edition. H.R. Boerma & J.E. Specht, eds., American Society of Agronomy, Inc., Crop Science Society of America, Inc., Soil Science Society of America, Inc., Madison, WI.
- Jones, P.W., **G.L. Tylka**, and R.N. Perry. 1998. Chapter 8, Hatching, pp. 181-212 in Physiology and Biochemistry of Free-living and Plant-parasitic Nematodes. R.N. Perry and D.J. Wright, eds., CAB International, Oxon, United Kingdom.
- V. Research abstracts (from last 5 years, 2009-present):
- Olson, L.K., **G.L. Tylka**, J. Jordhal, S. Meyer, J. Goltz, J. Kringler, T. Helms, and S. Markell. 2013. Increasing awareness of soybean cyst nematode in North Dakota. *Phytopathology* 103(S4):107-108.
- Tatalovic, N., **G.L. Tylka**, and L.F. Leandro. 2013. Effect of watering regime and *Fusarium virguliforme* (Fv) infection on location of soybean cyst nematode (SCN) syncytia in soybean roots. *Phytopathology* 103(S4):143.
- Tylka, G.L.**, M.T. McCarville, C.C. Marett, G.D. Gebhart, D.H. Soh, M.P. Mullaney, and M.E. O'Neal. 2013. Direct comparison of soybean cyst nematode reproduction on resistant soybean varieties in greenhouse and field experiments. *Journal of Nematology* 45(4): 279–330.
- Diaz-Arias, M., **G.L. Tylka**, L. Leandro, and G.P. Munkvold. 2011. Interactions between *Fusarium* root rot pathogens and *Heterodera glycines*, on soybean roots. *Phytopathology* 101:S42.
- Niblack, T.L., J. Bond, and **G.L. Tylka**. 2011. The nightmare of plant diseases associated with soybean cyst nematodes. *Phytopathology* 101:S209.
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Ally, M., W. Bailey, A. Blaine, C. Boerboom, M. Draper, J. Dunphy, R. Elmore, F. Fishel, C. Grau, D. Hershman, B. Johnson, S. Killpack, S. Naeve, E. Nafziger, D. Oliver, D. Peterson, G. Rehm, P. Scharf, L. Sweets, **G. Tylka**, and W. Wiebold. 2001. U.S. soybean diagnostic guide. United Soybean Board publication, 50 pp., plus CD and online at www.psu.missouri.edu/soydoc/.

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Tylka, G.L. 1997. Scouting for corn nematodes. Iowa State University Extension, publication IPM-53s, 1p.

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VII. Electronic extension education materials:

Tylka, G.L. and A. Ciha. 2009. Corn nematodes. Iowa State University Crop Adviser Institute training module (online and on CD).

Tylka, G.L. 2007. Soybean cyst nematode: biology, scouting, and management (presentation with audio). Online. Plant Health Management Network, Focus on Soybean. www.plantmanagementnetwork.org/infocenter/topic/focusonsoybean/.

Tylka, G.L. and B. Brueland. 2006. Soybean cyst nematode. Iowa State University Crop Adviser Institute training module (online and on CD).

NOTEWORTHY INVITED PRESENTATIONS (last 5 years, 2009-present)

January 2014	Syngenta National Clariva Launch Conference, January 7, 2014, Orlando, Florida, "Status of resistant soybean varieties for management of SCN"
August 2013	Innovations in Seed Treatments for Crop Protection and Health symposium, American Phytopathological Society annual meeting, August 14, 2013, Austin, Texas, "Nematode-protectant seed treatments: New options for nematode management in row crops"
March 2013	Soybean Cyst Nematode and Nematodes on Corn Workshop, Fargo, North Dakota, March 6-7, 2013
February 2013	Syngenta Soybean Crop Team Nematode Conference, February 5, 2013, Campinas, Brazil, "Managing SCN with resistant soybean varieties"
February 2013	World Soybean Research Conference, February 20, 2013, Durban, South Africa, "SCN resistance: how it all comes together in the Midwestern United States"
March 2012	"Nematode Seed Treatment Protectants: Do Growers Need That Type of Insurance?", 7 th International Integrated Pest Management Symposium, Memphis, Tennessee, March 28, 2012
March 2012	"SCN-resistant Soybeans, HG types, Yield, and SCN Reproduction – How It All Comes Together in the Field in Iowa", Annual meeting of the Southern Soybean Disease Workers, Pensacola, Florida, March 7, 2012
February 2012	"Soybean Cyst Nematode Update for the Region", Advanced Crop Advisers Workshop, Fargo, North Dakota, February 10, 2012
February 2012	"Nematodes of Soybean and Corn: Recognizing the Risk and Tapping into the Right Management Tools", Advanced Crop Advisers Workshop, Fargo, North Dakota, February 9, 2012
December 2011	"Nematodes That Feed on Corn: Prospects for 2012", South Dakota Agronomy Conference, Sioux Falls, South Dakota, December 15, 2011
November 2011	"Nematodes That Feed on Corn: What to Make of it All", University of Missouri Crop Management Conference, Columbia, Missouri, November 30, 2011
November 2011	"The ISU Corn and Soybean Initiative: Redefining Crops Extension Through Formal Partnerships with Private Industry Service Providers", Ohio State University, Columbus, Ohio, November 1, 2011

NOTEWORTHY INVITED PRESENTATIONS (last 5 years, 2009-present) (continued)

- November 2011 “Soybean Cyst Nematode, Host Resistance, and HG Types: What Does it All Mean for Growers?”, Ohio State University, Columbus, Ohio, November 1, 2011
- March 2011 Soybean Cyst Nematode and Nematodes on Corn Workshop, Fargo, North Dakota, March 9-10, 2011
- February 2011 “Biology and Management of Plant-parasitic Nematodes on Crop Plants”, Great Plains Consultants Meeting, Bayer CropScience, Denver, CO, February 22, 2011
- December 2010 “Biology and Management of Nematodes that Feed on Corn” and “Soybean Cyst Nematode; Biology, Scouting, and Management for South Dakota”, 2010 South Dakota Agronomy Conference, Sioux Falls, SD, December 14, 2010
- July 2010 “Maximizing Effectiveness of Extension Education Efforts”, Symposium on Educational Strategies and Methodologies in Nematology, Society of Nematologists 2010 Annual Meeting, Boise, ID, July 13, 2010
- February 2009 “Managing Soybean Cyst Nematode Using Precision Farming Technologies”, National Alliance of Independent Crop Consultants, Bloomington, MN, February 12, 2009

PATENTS AWARDED

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- Coats, J. R., C.J. Peterson, R. Tsao, A.L. Eggler, and **G.L. Tylka**. 2001. Biopesticides related to natural sources. U.S. Patent Number 6,207,705.
- Kraus, G.A., **G.L. Tylka**, and S. Van der Louw. 1997. Ketodiacid compounds that inhibit nematode egg hatching. U.S. Patent Number 5,648,318.