

Gail G. Wilkerson
Professor

North Carolina State University
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Education:

Ph.D.	Entomology	University of Florida	1980
M.S.	Entomology	University of Florida	1974
B.S.	Mathematics	Duke University	1968

Positions Held:

Professor, Crop Science and Statistics (Biomathematics Graduate Program), North Carolina State University, 1995-present

Associate Professor, Crop Science and Statistics (Biomathematics Graduate Program), North Carolina State University, 1990-1995

Assistant Professor, Crop Science and Statistics (Biomathematics Graduate Program), North Carolina State University, 1985-1990

Assistant Research Scientist, Agricultural Engineering Department, University of Florida, 1980-1984

Research Interests: The major goal of Dr. Wilkerson's research program is to improve crop and turf management decision-making through the application of computer technology. Research has been concentrated in the following areas: 1) development of computerized crop and pest management decision aids; 2) evaluation of scouting protocols through a combination of field research and simulation experiments, and 3) development of physiologically based models of crop growth, pest population dynamics, and crop/pest interactions. Recently, Dr. Wilkerson has turned her attention to developing Web-based applications, and to evaluating the possibility of using information on climate variability and climate forecasts to improve crop and pest management decision-making.

Selected Professional Activities:

Professional and Honorary Societies: American Society of Agronomy, Crop Science Society of America, American Society of Agricultural and Biological Engineers, Weed Science Society of America, Southern Weed Science Society, Gamma Sigma Delta, Phi Kappa Phi, Sigma Xi

Professional Service to Regional and National Organization:

- Southeast Climate Consortium, executive committee 2008-present
- Member of USDA/ARS National Program 305 assessment panel, 2006
- Computer Software Applications Committee, American Society of Agronomy, chair 1998
- *Agronomy Journal*, Associate Editor, 1991-1996
- ESCOP Pest Management Integration Working Group, member 1990-1996

- Member of USDA/CSREES peer science evaluation panels in 1988, 1991, 1996, 1998, 2003, 2009

Professional Service to the University:

- CALS Academic Computer Advisory Committee, member 1994-1998; chair 1996-1997
- NCSU Faculty Senate, member 1998-2002; executive committee 1999-2002
- NCSU Resources & Environment Subcommittee, NCSU Faculty Senate, chair 2001-2002
- NCSU University Housing Committee, member 1998-2000
- NCSU University Computer Standards Committee, member 2000-2002
- Gamma Sigma Delta, secretary of NCSU Chapter, 2004-2008

Web Sites and Decision Aids Developed:

Peanut Risk Management Decision Aid: <http://www.peanut.ncsu.edu/risk/>

Peanut Production in the Carolinas and Virginia: <http://www.peanuts.ncsu.edu/>

TurfFiles: <http://www.turffiles.ncsu.edu/>

Turf Disease ID: <http://www.turffiles.ncsu.edu/diseaseID/>

Turf Disease Management: <http://www.turffiles.ncsu.edu/diseasemgmt/>

Turf and Weed ID: <http://www.turffiles.ncsu.edu/turfid/>

Turf Weed Management: <http://www.turffiles.ncsu.edu/turfweedmgmt/>

Turfgrass/Cultivar Selection: <http://www.turffiles.ncsu.edu/turfselect/turfselection.aspx>

WebHADSS (Herbicide Application Decision Support System): <http://www.webhadss.ncsu.edu/>

SoyVar (Soybean Variety Selection): <http://www.soybeans.ncsu.edu/soyvar/>

Selected Publications:

Wilkerson, G. G., J. W. Jones, K. J. Boote, K. T. Ingram, and J. W. Mishoe. 1983. Modeling soybean growth for crop management. *Trans. ASAE* 26:63-73.

Wilkerson, G. G. , J. W. Mishoe, and J. L. Stimac. 1986. Modeling velvetbean caterpillar (*Lepidoptera: Noctuidae*) populations in soybeans. *Environ. Entomol.* 15:809-816.

Wilkerson, G. G., J. W. Jones, K. J. Boote, and G. S. Buol. 1989. Determination of photoperiodically sensitive interval in time to flower of soybean. *Crop Science* 29:721-726.

Gold, H. J., G. G. Wilkerson, Y. Yu, and R. E. Stinner. 1990. Decision analysis as a tool for integrating simulation with expert systems when risk and uncertainty are important. *Computers and Electronics in Agriculture.* 4:343-360.

Lim, J. T., G. G. Wilkerson, C. D. Raper, Jr., and H. J. Gold. 1990. A dynamic model of vegetative soya bean plants: model structure and behaviour under varying root temperature and nitrogen concentration. *J. Exp. Botany.* 41:229-241.

Wiles, L. J. and G. G. Wilkerson. 1991. Modeling competition for light between soybeans and broadleaf weeds. *Agric. Systems.* 35:37-51.

- Wilkerson, G.G., S. A. Modena and H. D. Coble. 1991. HERB: Decision model for postemergence weed control in soybeans. *Agron. J.* 83:413-417.
- Wiles, L. J., G. G. Wilkerson, H. J. Gold, and H. D. Coble. 1992. Modeling weed distribution for improved postemergence control decisions. *Weed Sci.* 40:546-553. (*Selected as Outstanding Paper for 1993 by Weed Science*).
- Krueger, D. W., G. G. Wilkerson, H. D. Coble, and H. J. Gold. 2000. An economic analysis of binomial sampling for weed scouting. *Weed Sci.* 48:53-60.
- Wilkerson, G. G., L. J. Wiles, and A. C. Bennett. 2002. Weed management decision models: pitfalls, perceptions, and possibilities of the economic threshold approach. *Weed Sci.* 50:411-424 (*Invited paper for 50th anniversary issue*).
- Bennett, A. C., A. J. Price, M. C. Sturgill, G. S. Buol, and G. G. Wilkerson. 2003. HADSSTM, Pocket HERBTM, and WebHADSSTM: Decision aids for field crops. *Weed Technol.* 17:412-420.
- Wilkerson, G. G., A. J. Price, A. C. Bennett, D. W. Krueger, G. T. Roberson, and B. L. Robinson. 2004. Evaluating the potential for site specific herbicide application in soybean (*Glycine max*). *Weed Technol.* 18:1101-1110.
- Mera, R. J., D. Niyogi, G. M. Buol, G. G. Wilkerson, F. H. M. Semazzi. 2006. Potential individual versus simultaneous climate change effects on soybean (C3) and maize (C4) crops: an agrotechnology model based study. *Global and Planetary Change* 54:163-182.
- Bruneau, A., G. Wilkerson, B. Robinson, and E. Erickson (editors). 2007. Turfgrass pest management manual: major turfgrass pests & turfgrasses. N. C. Coop. Ext. Bull. AG-348 (Revised).
- Robinson, B. L., J. M. Moffitt, G. G. Wilkerson, and D. L. Jordan. 2007. Economics and effectiveness of alternative weed scouting methods in peanut. *Weed Technol.* 21:88-96.
- Yang, Z., G. G. Wilkerson, G. S. Buol, and R. W. Heiniger. 2009. Estimating genetic coefficients for the CSM-CERES-Maize model in North Carolina environments. *Agron. J.* 101:1276-1285.
- Niyogi, D., R. Mera, Y. Xue, G. Wilkerson, F. Booker. 2010. The use of Factor Separation Method for climate variable interaction studies in hydrological land surface models and crop yield models. *In: The Factor Separation Method in the Atmosphere-Applications and Future Prospects*, Cambridge University Press, in press.
- Lassiter, B., R. Richardson, and G. Wilkerson. 2010. Aquatic Weeds: A pocket identification guide for the Carolinas. N.C. Coop. Ext. Bull. AG - 731.