

C. Owen Gwathmey
Associate Professor, Plant Sciences
Professional Vitae, 2002-2008

Address

University of Tennessee, West Tennessee Research & Education Center, 605 Airways Blvd., Jackson, TN 38301. Phone 731.425.4749. Fax: 731.425.4760.

E-mail : cogwathmey@utk.edu

URL: <http://plantsciences.utk.edu/gwathmey.htm>

Education

Ph.D., University of California, Riverside, 1991, Botany (Plant Physiology).

M.S., California Polytechnic State University, San Luis Obispo, 1978, Agriculture.

B.S., University of California, Davis, 1969, Zoology (Ecology).

Professional Academic Experience

2005 - 2008: Associate Professor, Crop Physiology, Univ. of Tennessee, Dept. of Plant Sciences, Jackson TN. Leader, Cotton Physiology Project (TEN00333).

1999 - 2004: Associate Professor, Crop Physiology and Agronomy, Univ. of Tennessee, Dept. of Plant Sciences, Jackson TN. Leader, Cotton Agronomy and Physiology Project (TEN00221).

1993 - 1998: Assistant Professor, Crop Physiology and Agronomy, University of Tennessee, Dept. of Plant and Soil Sciences, Jackson TN. Leader, Cotton Physiology and Agronomy Project (TEN00083).

Area of Expertise and Appointment

Crop physiology and agronomy. Research on varietal adaptation, carbohydrate physiology, mineral nutrition, planting and harvest systems, crop maturity, and fiber quality of cotton. 100% research appointment in the Tennessee Agricultural Experiment Station.

Students Mentored, 2002-2008

Clement, J.D. 2004-2006, Plant Sciences. M.S. thesis: Potassium and Cultivar Effects on Carbohydrate Partitioning in Upland Cotton. Univ. Tennessee, Knoxville, May 2006. 170 p.

Research Publications, 2002-2008

Gwathmey, C.O., L.E. Steckel, and J.A. Larson. 2008. Solid and skip-row spacings for irrigated and nonirrigated upland cotton. *Agron. J.* 100:672-680. doi: 10.2134/agronj2007.0240.
<http://agron.scijournals.org/>

Gwathmey, C.O., M.A. Newman, and C.H. Canaday. 2008. Does N or K nutrition affect bronze wilt in field-grown cotton? Online. *Plant Health Progress* doi:10.1094/PHP-2008-1117-01-RS.
<http://www.plantmanagementnetwork.org/sub/php/research/2008/bronze/>

Viator, R.P., C.O. Gwathmey, J.T. Cothren, J.T. Reed, E.D. Vories, R.C. Nuti, K.L. Edmisten, and R. Wells. 2008. Influence of ultranarrow row and conventional row cotton on the last effective boll population. *Agron. J.* 100:1327-1331. <http://agron.scijournals.org/>

Clement-Bailey, J., and C.O. Gwathmey. 2007. Potassium effects on partitioning, yield and earliness of contrasting cotton cultivars. *Agron. J.* 99:1130-1136. <http://agron.scijournals.org/>

Larson, J.A., R.K. Roberts, and C.O. Gwathmey. 2007. Herbicide-resistant technology price effects on the plant density decision for ultra-narrow-row cotton. *J. Agric. Res. Econ.* 32(2): 383-401.
<http://agecon.uwyo.edu/JAREonline/toc32-2.htm>

- Gwathmey, C.O., and C.C. Craig, Jr. 2006. Defoliants for Cotton. *Encycl. Pest Mgt.* DOI: 10.1081/E-EPM-120009914. Marcel Dekker, Inc., New York. [Online] <http://www.dekker.com/sdek/issues~db=enc~content=t713172972>
- Larson, J.A., C.O. Gwathmey, and R.M. Hayes. 2005. Effects of defoliation timing and desiccation on net revenues from ultra narrow row cotton. *J. Cotton Sci.* 9:204-214. <http://www.cotton.org/journal/2005-09/>
- Gwathmey, C.O. 2005. Do contemporary cotton cultivars respond differently to potassium fertilization. *Better Crops* 89(3):8-10. <http://www.ppi-ppic.org/bettercrops>
- Gwathmey, C.O., C.W. Bednarz, D.D. Fromme, E.M. Holman, and D.K. Miller. 2004. Response to defoliation timing based on heat-unit accumulation in diverse field environments. *J. Cotton Sci.* 8:142-153. <http://www.cotton.org/journal/2004-08/3/>
- Larson, J.A., C.O. Gwathmey, R.K. Roberts, and R.M. Hayes. 2004. Effects of plant population density on net revenues from ultra-narrow-row cotton. *J. Cotton Sci.* 8:69-82. <http://www.cotton.org/journal/2004-08/2/>
- Gwathmey, C.O., and C. C. Craig, Jr. 2003. Managing earliness in cotton with mepiquat-type growth regulators. *Crop Management.* doi:10.1094/CM-2003-1222-01-RS. <http://www.plantmanagementnetwork.org/cm/>
- Larson, J.A., C.O. Gwathmey, and R.M. Hayes. 2002. Cotton defoliation and harvest timing effects on yields, quality, and net revenues. *J. Cotton Sci.* 6:13-27. <http://www.jcotsci.org>
- Logan, J., and C.O. Gwathmey. 2002. Effects of weather on cotton responses to harvest-aid chemicals. *J. Cotton Sci.* 6:1-12. <http://www.jcotsci.org>

Abstracts of Professional Presentations, 2002-2008 (*denotes graduate student presentation)

- Gwathmey, C.O., C.L. Main and C.E. Michaud. 2008. Relationship of NDVI to crop maturity differences due to K fertility. p. 147. *In Proc. Beltwide Cotton Conf.*, 8-11 Jan 2008, Nashville, TN. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., and D.D. Tyler. 2008. Monitoring crop maturity with the normalized difference vegetation index. Paper 1403. *World Cotton Research Conf.-4*, 10-14 Sep 2007, Lubbock TX. ©2008 Ompipress [CD-ROM]
- Clement-Bailey, J.,* and C.O. Gwathmey. 2008. Earliness, partitioning, and yield responses to potassium in cotton cultivars. Paper 1302. *World Cotton Research Conf.-4*, 10-14 Sep 2007, Lubbock TX. ©2008 Ompipress [CD-ROM]
- Gwathmey, C.O., and L.E. Steckel. 2007. Solid versus skip-row patterns of 15-inch and 30-inch row cotton. p. 1779. *In Proc. Beltwide Cotton Conf.*, 9-12 Jan 2007, New Orleans, LA. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., and D.D. Tyler. 2007. Use of NDVI and COTMAN to monitor crop maturity. [Precision Cotton Workshop.] p. 105. *In Proc. Beltwide Cotton Conf.*, 9-12 Jan 2007, New Orleans LA. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Clement, J.D.,* and C.O. Gwathmey. 2006. Potassium effects on earliness, partitioning, and yield in cotton cultivars. Abstract 1722b. *In 2006 International Meeting Abstracts, ASA-CSSA-SSSA, Div. C2*, 15 Nov. 2006, Indianapolis IN. <http://crops.confex.com/crops/2006am/techprogram/P26230.htm>
- Clement, J.D.,* and C.O. Gwathmey. 2006. Carbohydrate partitioning in relationship to lint yield in contrasting cotton cultivars. *ASA Southern Regional Branch Meeting*, 5-7 Feb. 2006, Orlando FL. <http://a-c-s.confex.com/crops/2006srb/techprogram/>
- Clement, J.D.,* and C.O. Gwathmey. 2006. Potassium and cultivar effects on partitioning of carbohydrates. p. 1674. *In Proc. Beltwide Cotton Conf.*, 3-6 Jan. 2006, San Antonio TX. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., and L.E. Steckel. 2006. Crop maturity differences associated with yield compensation in skip-row cotton. p. 1871. *In Proc. Beltwide Cotton Conf.*, 3-6 Jan. 2006, San Antonio TX. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>

- Gwathmey, C.O. 2005. Cotton cultivar response to nitrogen and potassium management. p. 55-56. *In* C. Crozier (ed.). Proc. Southern Plant Nutrient Mgt. Conf., 3-5 Oct 2005, Olive Branch MS. Samuel Roberts Noble Fdn., Ardmore OK.
- Gwathmey, C.O., C.C. Craig, Jr., J.D. Clement and C.E. Michaud. 2005. Partitioning and yield responses of contrasting cultivars to potassium nutrition. p. 2033. *In* Proc. Beltwide Cotton Conf., 4-7 Jan. 2005, New Orleans LA. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O. 2004. Yield consequences of last effective boll designation. p. 1971. *In* Proc. Beltwide Cotton Conf., 5-9 Jan 2004, San Antonio TX. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., J.B. Bynum, J.T. Cothren, K.L. Edmisten, J.T. Reed, R.P. Viator, and E.D. Vories. 2004. Adaptation of COTMAN for use in UNR cotton. p. 229 and p. 2181. *In* Proc. Beltwide Cotton Conf., 5-9 Jan 2004, San Antonio TX. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., and C.C. Craig, Jr. 2004. Growth and yield responses to mepiquat-type PGRs in Tennessee. p. 2244-2248. *In* Proc. Beltwide Cotton Conf., 5-9 Jan 2004, San Antonio TX. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., C.C. Craig Jr., and W.W. Harris. 2003. Skip-row cotton response to mepiquat chloride with *Bacillus cereus*. p. 1704. *In* Proc Beltwide Cotton Conf., 6-10 Jan. 2003, Nashville TN. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., K.L. Edmisten, and R.P. Viator. 2003. Last effective boll population studies. p. 1754. *In* Proc Beltwide Cotton Conf., 6-10 Jan. 2003, Nashville TN. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/>
- Gwathmey, C.O., N.R. Benson, W.D. Caldwell, K.D. Howard, T.A. Kerby, and B.J. Phipps. 2002. Uniformity of cotton plant age and growth affected by planting seed size. *In* Proc. Beltwide Cotton Conf., 8-12 Jan 2002, Atlanta GA. Natl. Cotton Council Am., Memphis TN. <http://www.cotton.org/beltwide/proceedings/2002/pdf/I004.pdf>
- Gwathmey, C.O. 2002. Precision planting UNR cotton. p. 7-9. *In* Proc. 5th Ann. Natl. Conserv. Tillage Cotton and Rice Conf. (J.M. LaRose, Ed.), 24-25 Jan 2002, Tunica MS. Mid America Farm Publ., Perryville MO. <http://www.cottoninc.com/ConservationTillage/>
- Gwathmey, C.O., and C.E. Michaud. 2002. Plant population density in ultra-narrow row cotton. C03-gwathmey081452-Poster. *In* 2002 Agronomy Abstracts. ASA-CSSA-SSSA, Madison WI. (CD-ROM)

Extension Publications, 2002-2008

- Gwathmey, C.O., and C.E. Michaud. 2008. Stage 4 Advanced Strains Test. p. 22-23. *In* Tennessee Cotton Variety Test Results 2007. (C.L. Main, C.O. Gwathmey, and F.L. Allen, Ed.) Univ. Tenn. Ext. Publ. PB 1742. Knoxville TN. Feb. 2008. <http://www.utextension.utk.edu/fieldCrops/cotton/VarietyTestingData/PB1742%20master%20copy.pdf>
- Gwathmey, C.O., T.D. Bush and C.E. Michaud. 2007. Official Variety Trials. p. 3-20. *In* Tennessee Cotton Variety Test Results 2006. (C.L. Main, C.O. Gwathmey, and F.L. Allen, Ed.) Univ. Tenn. Ext. Publ. PB 1742. Knoxville TN. Feb. 2007. http://www.utextension.utk.edu/fieldCrops/cotton/VarietyTestingData/2006_FinalCotton.pdf
- Gwathmey, C.O., C.E. Michaud, and T.D. Bush. 2007. Stage 4 Advanced Strains Test. p. 21-22. *In* Tennessee Cotton Variety Test Results 2006. (C.L. Main, C.O. Gwathmey, and F.L. Allen, Ed.) Univ. Tenn. Ext. Publ. PB 1742. Knoxville TN. Feb. 2007. http://www.utextension.utk.edu/fieldCrops/cotton/VarietyTestingData/2006_FinalCotton.pdf
- Gwathmey, C.O., and C.E. Michaud. 2006. Preliminary variety trials. p. 26-32. *In* Tennessee Cotton Variety Test Results in 2005. (C. Craig, C.O. Gwathmey and F.L. Allen, Ed.). Univ. Tenn. Ext. Publ. PB1742. <http://www.utextension.utk.edu/fieldCrops/cotton/VarietyTestingData/2005CottonVarTestReport.pdf>
- Gwathmey, C.O., and C.E. Michaud. 2006. Early evaluation of new varieties. p. 33-35. *In* Tennessee Cotton Variety Test Results in 2005. (C. Craig, C.O. Gwathmey and F.L. Allen, Ed.). Univ. Tenn. Ext. Publ.

- PB1742. Univ. of Tennessee, Knoxville TN.
<http://www.utextension.utk.edu/fieldCrops/cotton/VarietyTestingData/2005CottonVarTestReport.pdf>
- Gwathmey, C.O., and C.E. Michaud. 2006. Stage 4 advanced strains test. p. 36-37. *In* Tennessee Cotton Variety Test Results in 2005. (C. Craig, C.O. Gwathmey and F.L. Allen, Ed.). Univ. Tenn. Ext. Publ. PB1742. Univ. of Tennessee, Knoxville TN.
<http://www.utextension.utk.edu/fieldCrops/cotton/VarietyTestingData/2005CottonVarTestReport.pdf>
- Gwathmey, C.O., and C.E. Michaud. 2005. Early evaluation of new varieties in 2004. Ch. II. *In* Tennessee Cotton Variety Test Results in 2004. (C. Craig, C.O. Gwathmey, and F.L. Allen, Ed.) Univ. Tenn. Ext. Publ. PB1742. Knoxville TN. <http://www.utextension.utk.edu/fieldCrops/cotton/varieties.htm>
- Gwathmey, C.O., and C.E. Michaud. 2004. Early evaluation of new varieties. Ch. II. *In* Tennessee Cotton Variety Test Results in 2003. (C. Craig, C.O. Gwathmey, and F.L. Allen, Ed.) Tenn. Agric. Ext. Service Publ. PB 1742. Univ. of Tennessee, Knoxville TN.
<http://www.utextension.utk.edu/fieldCrops/cotton/varieties.htm>
- Gwathmey, C.O., C.E. Michaud, M.C. Smith, and J.S. Williams. 2003. Advanced variety trials. Ch. I. *In* Tennessee Cotton Variety Test Results in 2002. (C.O. Gwathmey, C.C. Craig, Jr., and F.L. Allen, Ed.) Tenn. Agric. Exp. Sta. Res. Rep. 03-04. Knoxville TN.
<http://www.utextension.utk.edu/fieldCrops/cotton/varieties.htm>
- Gwathmey, C.O., and C.E. Michaud. 2003. Preliminary variety trials. Ch. II. *In* Tennessee Cotton Variety Test Results in 2002. (C.O. Gwathmey, C.C. Craig, Jr., and F.L. Allen, Ed.) Tenn. Agric. Exp. Sta. Res. Rep. 03-04. Knoxville TN. <http://www.utextension.utk.edu/fieldCrops/cotton/varieties.htm>
- Gwathmey, C.O., and C.E. Michaud. 2003. Early evaluation of new varieties. Ch. III. *In* Tennessee Cotton Variety Test Results in 2002. (C.O. Gwathmey, C.C. Craig, Jr., and F.L. Allen, Ed.) Tenn. Agric. Exp. Sta. Res. Rep. 03-04. Knoxville TN. <http://www.utextension.utk.edu/fieldCrops/cotton/varieties.htm>
- Bell, A.A., R.L. Nichols, D. Albers, R. Baird, S. Brown, P. Colyer, K. El-Zik, C.O. Gwathmey, R. Lemon, M. Newman, B.J. Phipps, and D.M. Oosterhuis. 2002. Bronze Wilt of Cotton. Texas Coop. Ext. Publ. L-5412 (2-02). 4 p. <http://agpublications.tamu.edu/pubs/scs/l5412.pdf>
- Gwathmey, C.O., F.L. Allen, C.E. Michaud, M.C. Smith, B. Williams, and J.S. Williams. 2002. Tennessee Cotton Variety Test Results in 2001. Univ. Tenn. Agric. Exp. Sta. Res. Rep. 01-02. Knoxville TN.
<http://www.taes.utk.edu/research/varietytrials/variety.html>
- Gwathmey, C.O., and R.M. Hayes. 2002. Cotton Harvest Aid Chemicals. p. 35-39. *In* G.N. Rhodes and G.K. Breeden (Ed.). 2002 Weed Control Manual for Tennessee. Univ. Tenn. Agric. Ext. Serv. Publ. PB1580, rev. 01/02. Knoxville TN. <http://www.utextension.utk.edu/weedcontrol/weedcontrol.html>

Guest Lectures and Invited Talks, 2002-2008

- “Cotton Production, Ginning and Quality.” UT Martin Field Crop Production class (PLSC 433). 23 Oct 2008, Jackson TN.
- “Nitrogen and Potassium Fertilization of Cotton” and “Response of Cotton to Sulfur Fertilization.” Field talks, Fall Crop Production Conf. Cotton Production Tour, 3 Sept 2008, West Tennessee Research & Education Center, Jackson TN.
- “Cotton Production in 15- and 30-inch Rows.” Field talk, National Cotton Council Producers’ Tour. 11 Aug 2008, Research & Education Center, Milan TN.
- “Cotton Production in 15- and 30-inch Rows.” Tour stop, Milan No-Till Crop Production Field Day. 24 July 2008, Research & Education Center, Milan TN. <http://taes.utk.edu/upload/RECMLN/2008milantourrpt.pdf>
- “Cotton Production and Ginning.” Union Univ. Biology 100 class, 18 Jan 2008, Jackson TN.
- “Plant Growth Regulators and Defoliant.” Cotton Short Course, Mississippi State Univ., 12 Dec 2007, Starkville MS.
- “Collecting Data from a Cotton Plant.” Hands-on exercise for 7th and 8th grade students, Parkview Montessori School, 12 Nov 2007, West Tennessee Research & Education Center, Jackson TN.
- “Cotton Physiology.” Lambuth Univ. Plant Physiology class visit, 26 Sept 2007, Jackson TN.
- “Crop Maturity Tracking Tools.” Cotton Focus meeting, UT Extension, 15 Feb 2007, Jackson TN.

- “Cotton Production, Ginning, and Quality.” UT Martin Crop Production class visit, 25 Oct 2006, Jackson TN.
- “Producing Cotton in 15- and 30-inch Rows.” National Cotton Council Leadership Class, 27 Sep 2006, Research & Education Center at Milan, TN.
- “Producing Cotton in 15- and 30-inch Rows.” John Deere Field Tour, Fullen Farm, 16 Aug 2006, Ashport TN.
- “Variety Overview – County Standard Tests.” Haywood Co. Cotton Field Day, 8 Aug 2006, Brownsville TN.
- “Producing Cotton in 15- and 30-inch Rows.” Tour stop, Milan No-Till Crop Production Field Day, 27 July 2006, Milan TN. <http://milan.tennessee.edu/MNTRFD/2006/tourreport2006.pdf>
- “Environmental Effects on Yield and Fiber Quality.” Cotton Focus, UT Extension, 9 Feb 2006, Jackson TN.
- “Cotton Cultivars for 2006.” Cotton Focus, UT Extension, 9 Feb 2006, Jackson TN.
- “Cotton Cultivars for 2006.” TAPA Agronomic Workshop, 30 Jan – 1 Feb 2006, Jackson TN.
- “Solid and Skip-Row Spacings for Cotton.” Tour stop, Milan No-Till Crop Production Field Day, 22 July 2004, Milan TN. <http://milan.tennessee.edu/MNTRFD/2004/tourreport2004.pdf>
- “Use of Plant Growth Regulators in Cotton Production.” Governor’s School Biotechnology students from UT Martin, 22 June 2005, Jackson TN.
- “Nitrogen and Potassium Nutrition of Cotton.” Cotton Focus, UT Extension, 15 Feb 2005, Jackson TN. <http://www.utextension.utk.edu/fieldCrops/cotton/Presentations/Gwathmey2005-Focus.pdf>
- “Cotton Ginning Processes and Products.” UT Martin Crop Production class visit, 25 Oct 2004, Jackson TN.
- “Row Spacing Research in Tennessee: a Progress Report.” Cotton Focus, UT Extension, 19 Feb 2004, Jackson TN.
- “What Went Right in 2003: A Physiologist's Perspective.” Bootheel Cotton Meeting, Univ. of Missouri, 10 Feb 2004, Kennett MO.
- “Cotton Ginning Processes and Products.” UT Martin Crop Production class visit, 14 Oct 2003, Jackson TN.
- “Trends in Transgenic Crops, Pesticide Use, and Soil Conservation Practices.” Union Univ. class visit, 19 July 2003, Jackson TN.
- “Earliness Management of Later Maturing Cotton Varieties.” TAPA Annual Meeting, 5 Feb 2003, Nashville TN.
- “Last Effective Cotton Bolls.” Tour Stop, Milan No-Till Crop Production Field Day. 25 July 2002, Milan TN.
- “Managing Cotton for Discount-Free Production.” 15th Annual EFS® Conf. Cotton Inc., 10-12 June 2002, Memphis TN.
- “Cotton Variety Update.” Phoenix Gin Co. Producer Breakfast. 12 March 2002, Tiptonville TN.
- “Earliness Management for Once-Over Harvest.” Shelby Co. Extension Row Crop Production Meeting, 26 Feb 2002, Millington TN.
- “Precision Planting UNR Cotton.” 5th Annual Nat. Conserv. Tillage Cotton and Rice Conf., 24-25 Jan 2002, Tunica MS.

Professional Memberships and Service

- Chair, Steering Committee, Beltwide Cotton Physiology Conf., Natl. Cotton Council, 2007 – 2008.
- Chair, Selection Committee, Outstanding Research Award in Cotton Physiology, NCC, 2007 – 2008.
- Member, Steering Committee, Beltwide Cotton Physiology Conf., Natl. Cotton Council, 2004 – 2008.
- Member, COTMAN Research Work Group, Cotton Inc., 2002 – 2008.
- Member, Precision Cotton Work Group, Cotton Inc., 2006 – 2008.
- Member, American Society of Agronomy, 1987 – present.
- Member, Crop Science Society of America, 1987 – present.
- Member, Tennessee Agricultural Production Association, 1997 -
- Manuscript peer-reviewer for Agronomy Journal, Crop Science, Environmental and Experimental Botany, Field Crops Research, Journal of Cotton Science, and Journal of the Science of Food and Agriculture.