

Dr. Joseph Awika

Associate Professor of Food Science and Technology
Soil & Crop Science Department, Texas A&M University

Education/Training

2003 PhD Cereal Chemistry Texas A&M University, College Station
1996 BS Food Science Egerton University, Kenya

Program statement

Dr. Awika's research focus is grain chemistry, processing and quality: Identifying mechanisms by which secondary plant metabolites and minor grain constituents can be optimized to improve food quality and human health; processing techniques to improve health and nutritional profile of grains. In these endeavors, he collaborates closely with plant breeders and geneticists as well as nutritional biochemists. He is also involved in international projects aimed at using grains to improve livelihood through nutrition and food security for small scale farmers in Africa. His teaching responsibilities are primarily in the Food Science Program where he teaches the capstone senior level Food Product Development (FSTC 401), as well as the elective Fundamentals of Baking (FSTC 305). He also teaches graduate level Carbohydrate Chemistry (FSTC 631) and directs graduate seminar (FSTC 681).

Positions and Employment

2004 – 2005 Assistant Professor, Arkansas State University, Jonesboro, AR
2006 – 2008 Assistant professor, University of Missouri, Columbia, MO
2008 – 2013 Assistant professor, Texas A&M University, College Station, TX
2013 – Present, Associate Professor, Texas A&M University, College Station, TX

Research productivity/accomplishments

Research funding summary, 2009 - present:

- ❖ Total (Awika and Co-PIs) = \$7,525,292
- ❖ Total allocated to Awika's lab = \$3,135,295

Publications summary

- ❖ Peer reviewed journal articles = 44; Book chapters = 6; Books edited = 1

Graduate advising/mentoring

- ❖ Post-Doctoral: current = 1; cumulative = 6
- ❖ PhD: current = 6; degree recipients = 5 (chair), 11 (committee member)
- ❖ MS: current = 1; degree recipients = 6 (chair), 20 (committee member)
- ❖ National society awards and fellowships by primary graduate advisees = 18
 - Five Best Graduate Research awards – AACCI (2009, 2011, 2012, 2014, 2015)
 - Eight Graduate Fellowships – AACCI (2011, 2012*2, 2013, 2015); IFT 2014, 2015*2
 - Five Best Graduate Research awards – SICNA (2009, 2011, 2013*2, 2014)

Selected honors and appointments

- ❖ *Associate Editor*, Journal of the Science of Food and Agriculture: 2011 – present
- ❖ *Associate Editor*, Cereal Chemistry: 2013 – present
- ❖ *Dean's Outstanding Achievement Award for an Interdisciplinary Research Team* - 2015
- ❖ *National Program Research Review Panel Member*, USDA-ARS OSQR, 2009-2010; 2014-15.
- ❖ *National Competition Panelist*, IFT Product Development Competition: 2010 - 2013.

- ❖ *Local Section Chair*, American Chemical Society: Univ. of Missouri, Columbia, 2007-2008.
- ❖ *Graduate Fellowships*, American Association of Cereal Chemists: 2001, 2002, 2003
- ❖ *Tom Slick Senior Graduate Research Fellowship*, Texas A&M University: 2002

Invited presentations

National meetings – 12; Foreign meetings – 14 (Africa, Asia, S. America, C. America, Europe)

B. Most recent peer-reviewed publications

1. L. Yang, L. Dykes, **J. M. Awika**. 2014. Thermal stability of sorghum 3-deoxyanthocyanidins. *Food Chemistry* 160, 246-258.
2. Cheryl L. Verbree, Aitkenhead-Peterson, J.A., Loeppert, R.H., **Awika, J.M.**, Payne, W.A. 2015. Shea (*Vitellaria paradoxa*) tree and soil parent material effects on soil properties and intercropped sorghum grain-Zn in southern Mali, West Africa. *Plant and Soil* 386, 21-33.
3. L.O. Ojwang, G. D. Noratto, G. Angel-Morales, T. Hachibamba, **J.M. Awika**, S. U. Mertens-Talcott. 2015. Polyphenolic Extracts from Cowpea (*Vigna unguiculata*) Protect Colonic Myofibroblasts (CCD18Co Cells) from Lipopolysaccharide (LPS)-Induced Inflammation - Modulation of microRNA 126. *Food & Function* 6, 146-154.
4. L. Yang, K. Allred, L. Dykes, C. D. Allred, and **J. M. Awika**. 2015. Enhanced action of apigenin and naringenin combination on estrogen receptor activation in non-malignant colonocytes: Implications on sorghum-derived phytoestrogens. *Food & Function* 6, 749-755.
5. Dunn, Kristen; Yang, Liyi; Girard, Audrey; Bean, Scott; **Awika, Joseph**. 2015. Interaction of sorghum tannins with wheat proteins and effect on *in vitro* starch and protein digestibility in a baked product matrix. *Journal of Agricultural and Food Chemistry* 63, 1234-1241.
6. Qingchang Meng; Seth C. Murray; Adam Mahan; Amy Collison; Liyi Yang; **Joseph Awika**. 2015. Rapid estimation of phenolic content in colored maize by near-infrared reflectance spectroscopy and its use in a breeding program. *Crop Science* 55, 2234-2243.
7. Ibrahim, AMH, J. Rudd, R. Devkota, J. Baker, R. Sutton, B. Simoneaux, G. Opeña, R. Herrington, L. Rooney, L. Dykes, **J. Awika**, LR. Nelson, A. Fritz, RL. Bowden, RA. Graybosch, Y. Jin, BW. Seabourn, X. Chen, J. Kolmer, P. Amand, G. Bai, and R. Duncan. 2015. Registration of ‘TAM 305’ Hard Red Winter Wheat. *Journal of plant Registrations* 9, 325–330.
8. Collison, Amy; Yang, Liyi; Dykes, Linda; Murray, Seth; **Awika, Joseph**. 2015. Influence of genetic background on anthocyanin and copigment composition and behavior during thermo-alkaline processing of maize. *Journal of Agricultural and Food Chemistry* 63, 5528-5538.
9. Cardoso, ML; Soraia S Pinheiro; Carlos Wanderle; Piler de Carvalho; Valéria AV Queiroz; Cícero B Menezes; Ana VB Moreira; Frederico AR Barros; **Joseph M. Awika**; Hércia SD Martino; Helena MP Sant’ana. 2015. Phenolic compounds profile in sorghum processed by extrusion cooking and dry heat in a conventional oven. *Journal of Cereal Science* 65, 220-226.
10. Tuncil, Y.E., Jondiko, T., Tilley, M., Hays, D.B., **Awika, J.M.** 2016. Combination of null alleles with 7+9 allelic pair at *Glu-B1* locus on the long arm of group 1 chromosome improves wheat dough functionality for tortillas. *LWT – Food Science & Technology* 65, 83-688.