

James J. Camberato

Academic Record

Ph.D.	North Carolina State Univ. - Soil Science	1987
M.S.	North Carolina State Univ. – Soil Science	1982
B.S.	University of Massachusetts – Plant and Soil Science	1980

Academic appointments

2013 – present	Professor, Purdue University
2006 – 2013	Associate Professor, Purdue University
2006 – 2014	Adjunct Professor, Clemson University
2003 – 2005	Professor and Extension specialist, Clemson University
1995 – 2003	Associate Professor and Extension specialist, Clemson University
1989 – 1995	Assistant Professor and Extension specialist, Clemson University

Industrial, business, and governmental positions

1987-1989	Res. Chemist, Tennessee Valley Auth., Nat. Fert. Dev. Center
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Awards and honors

- 2018 - Purdue University Cooperative Extension Specialists Association Team Award – CCA Crop Conference Planning Committee.
- 2017 – Corn Field Scout. C.K. Gerber et al. American Society of Agronomy Extension Education Community Award - Digital Decision Aids.
- 2008 – Purdue Agriculture Team Award: Purdue Crop Diagnostic Training and Research Center.
- 2007 – Entomology Educational Project Award for the Extension Publication: Corn & Soybean Field Guide, 2007 Edition. Board Certified Entomologists of Mid-America. (many authors)
- 2006 – Educational Materials Contest Certificate of Excellence, Publications. Corn & Soybean Field Guide, 2006 Edition. American Society of Agronomy
- 2001 – Cooperative Extension Superior Performance Award. Clemson University.
- 1995 – Achievement Award. National and South Carolina Association of County Agricultural Agents.
- 1983 – Outstanding Graduate Teaching Assistant Award. North Carolina State Univ.

Memberships in academic, professional, and scholarly societies

- Soil Science Society of America
- Agronomy Society of America

Responsibilities of Current Position

Dr. Camberato is a soil and plant scientist conducting engagement, research, and teaching in soil fertility and plant nutrition of agronomic crops.

Refereed Articles

79. Clark, J.D., F.G. Fernández, K.S. Veum, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, D.E. Kaiser, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, C.J. Rosen, J.E. Sawyer, and John F. Shanahan. Soil-nitrogen, potentially mineralizable-nitrogen, and field condition information marginally improves corn nitrogen management. Accepted June 2020. <https://doi.org/10.1002/agj2.20335>
78. Martinez, A., J. Ashketar, P.R. Owens, and J.J. Camberato. Using terrain algorithms on a digital elevation model to evaluate yield variability in oil palm. *J. Oil Palm Res.* Accepted June, 2020.
77. Bean, G.M., N.R. Kitchen, K.S. Veum, J.J. Camberato, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M Laboski, E.D. Nafziger, J.E. Sawyer, and M. Yost. 2020. Relating four-day soil respiration to corn nitrogen fertilizer needs across 49 U.S. midwest fields. Accepted, *SSSAJ* May, 2020. <https://doi.org/10.1002/saj2.20091>
76. Clark, J.D., F.G. Fernández, K.S. Veum, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, D.E. Kaiser, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, C.J. Rosen, J.E. Sawyer, and John F. Shanahan. 2020. Adjusting corn nitrogen management by including a mineralizable-nitrogen test with the preplant and presidedress nitrate tests. *Agron. J.* 112:3050-3064. <https://doi.org/10.1002/agj2.20228>
75. Clark, J., K.S. Veum, F.G. Fernández, N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, D.E. Kaiser, C.A.M. Laboski, E.D. Nafziger, C.J. Rosen, J.E. Sawyer, and John F. 2020 Shanahan. Soil sample timing, nitrogen fertilization, and incubation length influence anaerobic potentially mineralizable nitrogen. *SSSAJ*. <https://doi.org/10.1002/saj2.20050>
74. Pasley, H.R., J.J. Camberato, J.E. Cairns, M. Zaman-Allah, B. Das, and T.J. Vyn. 2020. Nitrogen rate impacts on tropical maize nitrogen use efficiency and soil nitrogen depletion in eastern and southern Africa. *Nutr. Cyl. Agroecosyst.* 116:397–408. <https://doi.org/10.1007/s10705-020-10049-x>
73. Ransom, C.J., N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, P.C. Scharf, and J.F. Shanahan. 2020. Corn nitrogen rate recommendation tools' performance across eight states US midwest corn belt states. *Agron. J.* 112:470-492. <https://doi.org/10.1002/agj2.20035>
72. Liu, Z., N. Yu, J.J. Camberato, J. Gao, P. Liu, B. Zhao, and J. Zhang. 2019. Crop production kept stable and sustainable with the decrease of nitrogen rate in North China Plain: An economic and environmental assessment over 8 years. *Sci. Rep.* 9:19335. <https://doi:10.1038/s41598-019-55913-1>.

71. Lacey, C., C. Nevins, J. Camberato, E. Kladivko, A. Sadeghpour, and S. Armstrong. Carbon and nitrogen release from cover crop residues and implications for cropping systems management. *J. Soil Water Conserv.* Accepted Oct. 2019.
70. Clark, J.D., F.G. Fernández, K.S. Veum, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, D.E. Kaiser, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, C.J. Rosen, J.E. Sawyer, and J.F. Shanahan. 2019. Predicting economic optimal nitrogen rate with the anaerobic potentially mineralizable nitrogen test. *Agron. J.* 111:1-10.
<https://doi:10.2134/agronj2019.03.0224>
69. Ji, Z., J. Camberato, C. Zhang, and Y. Jiang. 2019. Effects of 6-benzyladenine, γ -aminobutyric acid, and nitric oxide on plant growth, photochemical efficiency, and ion accumulation of perennial ryegrass cultivars to salinity stress. *HortSci.* 54:1418-1422.
<https://doi.org/10.21273/HORTSCI14067-19>.
68. Pasley, H.R., J.E. Cairns, J.J. Camberato, and T.J. Vyn. 2019. Nitrogen fertilizer rate increases plant uptake and soil availability of essential nutrients in continuous maize production in Kenya and Zimbabwe. *Nutr. Cyl. Agroecosyst.* <https://doi.org/10.1007/s10705-019-10016-1>.
67. Clark, J., K.S. Veum, F.G. Fernández, N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, D.E. Kaiser, C.A.M. Laboski, E.D. Nafziger, C.J. Rosen, J.E. Sawyer, and John F. Shanahan. 2019. United States Midwest soil and weather conditions influence anaerobic potentially mineralizable nitrogen. *SSSAJ* 83:1137-1147.
<https://doi:10.2136/sssaj2019.02.0047>
66. Yao, Y., C. Zhang, J.J. Camberato and Y. Jiang. 2019. Nitrogen and carbon contents, nitrogen use efficiency, and antioxidant responses of perennial ryegrass accessions to nitrogen deficiency. *J. Plant Nutr.* <https://doi.org/10.1080/01904167.2019.1655047>.
65. Ransom, C.J., N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D.W. Franzen, C.A.M. Laboski, D.B. Myers, E.D. Nafziger, J.E. Sawyer, and J.F. Shanahan. 2019. Statistical and machine learning methods evaluated for incorporating soil and weather into corn nitrogen recommendations. *Computers and Electronics in Agriculture* 163:104872.
<https://doi.org/10.1016/j.compag.2019.104872>.
64. Penn, C., and J.J. Camberato. 2019. A critical review on soil processes that control how soil pH affects phosphorus availability to plants. *MDPI Agriculture* 9, 120.
<https://doi:10.3390/agriculture9060120>.
63. Qin, Z., D.B. Myers, C.J. Ransom, N.R. Kitchen, S-Z. Liang, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D.W. Franzen, C.A.M. Laboski, B.D. Malone, E.D. Nafziger, J.E. Sawyer, and J.F. Shanahan. 2018. Application of machine learning methodologies for predicting corn economic optimal nitrogen rate. *Agron. J.* 110:2596-2607.
<https://doi:10.2134/agronj2018.03.0222>.

62. Bean, G.M., N.R. Kitchen, J.J. Camberato, R.B. Ferguson, D.W. Franzen, F.G. Fernández, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, P.C. Scharf, J.S. Schepers, and J.F. Shanahan. 2018. Active-optical reflectance sensing corn algorithms evaluated over the United States Midwest Corn Belt. *Agron. J.* 110:2552-2565. <https://doi:10.2134/agronj2018.03.0217>.
61. Bean, G.M., N.R. Kitchen, J.J. Camberato, R.B. Ferguson, D.W. Franzen, F.G. Fernández, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, P.C. Scharf, J.S. Schepers, and J.F. Shanahan. 2018. Improving an active-optical reflectance sensor algorithm using soil and weather information. *Agron. J.* 110:2541-2551. <https://doi:10.2134/agronj2017.12.0733>.
60. Liu, J., Y.Y. Guo, Y.W. Bai, J.J. Camberato, J.Q. Xue, and R.H. Zhang. 2018. Effects of drought stress on the photosynthesis of maize. *Russian J. Plant Phys.* 65:849-856. <https://doi:10.1134/S1021443718060092>.
59. Penn, C., E. Rutter, D. Arnall, J. Camberato, M. Williams, and P. Watkins. 2018. A discussion on Mehlich-3 phosphorus extraction from the perspective of chemical equilibrium: Impact of soil pH. *MDPI Agriculture* 8, 106. <https://doi:10.3390/agriculture8070106>.
58. Yost, M.A., K.S. Veum, N.R. Kitchen, J.E. Sawyer, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D.W. Franzen, C.A. Laboski, and E.D. Nafziger. 2018. Evaluation of the soil health nutrient tool for corn nitrogen recommendations across eight midwest states. *J. Soil Water Conserv.* 73:587-592. <https://doi:10.2489/jswc.73.5.587>.
57. Morris, T.F., T.S. Murrell, D.B. Beegle, J.J. Camberato, R.B. Ferguson, Q. Ketterings, P.M. Kyveryga, C.A.M. Laboski, J.M. McGrath, J.J. Meisinger, J. Melkonian, B.N. Moebius-Clune, E.D. Nafziger, D. Osmond, J.E. Sawyer, P.C. Scharf, W. Smith, J.T. Spargo, H.M. Van Es, and H. Yang. 2018. Strengths and limitations of nitrogen rate recommendations for corn and opportunities for improvement. *Agron. J.* 110:1-37. <https://doi:10.2134/agronj2017.02.0112>.
56. Canegallo, A., S.B. Martin, J. Camberato and S. Jeffers. 2017. Seashore paspalum cultivar susceptibility to large patch and fungicide evaluation for disease control in South Carolina. *Intl. Turfgrass Soc. Res. J.* 13: 1: 185-190. <https://doi:10.2134/itsrj2016.04.0265>.
55. Mueller, S.M., J.J. Camberato, J. Shanahan, H. Zhang, and T.J. Vyn. 2017. Late-split N applications increase plant N recovery but not yield in maize. *Agron. J.* 109:2689-2699. <https://doi:10.2134/agronj2017.05.0282>.
54. Kitchen, N.R., J.F. Shanahan, C.J. Ransom, C.J. Bandura, G.M. Bean, J.J. Camberato, P.R. Carter, et al. 2017. A public-industry partnership for enhancing corn nitrogen research and datasets: Project description, methodology, and outcomes. *Agron. J.* 109:2371–2388.
53. Schulze, D.G., N.C. Landin, P.R. Owens, and J.J. Camberato. 2017. Evidence for a naturally occurring post-glacial acid sulfate weathering event in northwestern Indiana, USA. *Geoderma* 308:341-349.

52. de Oliveira Silva, A., J.J. Camberato, T. Coram, T.R. Filley, and T.J. Vyn. 2017. Applicability of a “Multi-stage pulse labeling” ¹⁵N approach to phenotype N dynamics in maize plant components during the growing season. *Front. Plant Science* 8:1-17. <https://doi:10.3389/fpls.2017.01360>.
51. Chen, K., J.J. Camberato, and T.J. Vyn. 2017. Maize grain yield and kernel component relationships to morpho-physiological traits in commercial hybrids separated by four decades. *Crop Sci.* 57:1-17. <https://doi:10.3235/cropsci2016.06.0540>.
50. Romero Luna, M.P., J.J. Camberato, and K.A. Wise. 2017. Survival of *Stenocarpella maydis* on corn residue in Indiana. *Plant Health Progress* 18:78-83. <https://doi:10.1094/PHP-RS-16-0063>.
49. Chen, K., J.J. Camberato, M.R. Tuinstra, S.V. Kumudini, M. Tollenaar, and T.J. Vyn. 2016. Genetic improvement in density and nitrogen stress tolerance traits over 38 years of commercial maize hybrid release. *Field Crops Res.* 196:438-451. <https://doi:10.1016/j.fcr.2016.07.025>.
48. Ren, B., H. Cui, J.J. Camberato, S. Dong, P. Liu, B. Zhao, and J. Zhang. 2016. Effects of shading on the photosynthetic characteristics and mesophyll cell ultrastructure of summer maize. *Sci. Nat.* 103:67. <https://doi:10.1007/s00114-016-1392-x>.
47. Zhang, R.H., X.H. Zhang, J.J. Camberato, and J.Q. Xue. 2015. Photosynthetic performance of maize hybrids to drought stress. *Russian J. of Plant Phys.* 62:788-796.
46. Kovács, P., G.E. Van Scoyoc, T.A. Doerge, J.J. Camberato, and T.J. Vyn*. 2015. Anhydrous ammonia timing and rate effects on maize N use efficiencies with parallel-to-row placement. *Agron. J.* 107:1205–1214. <https://doi:10.2134/agronj14.0350>.
45. Cui, H., J.J. Camberato, L. Jin, and J. Zhang*. 2014. Effects of shading on spike differentiation and grain yield formation of summer maize in the field. *International Journal of Biometeorology* <https://doi:10.1007/s00484-014-0930-5>.
44. Camberato, D.M., J.J. Camberato, and R.G. Lopez*. 2014. Determining the effect of carrier water pH and bicarbonate concentration on final pH of plant growth regulator solutions. *HortSci.* 49:1176–1182.
43. Kovács, P., G.E. Van Scoyoc, T.A. Doerge, J.J. Camberato, and T.J. Vyn*. 2014. Pre-plant anhydrous ammonia placement consequences on no-till versus conventional-till maize growth and N responses. *Agron. J.* 106:634–644.
42. Marquardt, P.T., C.H. Krupke, J.J. Camberato, and W.G. Johnson*. 2014. The effect of nitrogen rate on transgenic corn Cry3Bb1 protein expression. *Pest Management Sci.* 70:763–767.
41. Ciampitti, I.A. *, S.T. Murrell, M. Tuinstra, J.J. Camberato, Y. Xia, P. Friedemann, and T.J. Vyn. 2013. Physiological dynamics of maize nitrogen uptake and partitioning in response to plant density and N stress factors: II. Reproductive phase. *Crop Sci.* 53:2588-2602.

40. Ciampitti*, I.A., S.T. Murrell, J.J. Camberato, M. Tuinstra, Y. Xia, P. Friedemann, and T.J. Vyn. 2013. Physiological dynamics of maize nitrogen uptake and partitioning in response to plant density and N stress factors: I. Vegetative phase. *Crop Sci.* 53:1-15.
39. Camberato, D.M., J.J. Camberato, and R.G. Lopez*. 2013. Comparing the adequacy of controlled-release and water-soluble fertilizers for bedding plant production. *HortSci.* 48:556-562.
38. Tang, J., X. Yu, N. Luo, F. Xiao, J.J. Camberato, Y. Jiang*. 2013. Natural variation of salinity response, population structure and candidate genes associated with salinity tolerance in perennial ryegrass accessions. *Plant, Cell & Environment* <https://doi:10.1111/pce.12112>
37. Tang, J. J.J. Camberato, X. Yu, N. Luo, S. Bian, and Y. Jiang*. 2013. Growth response, carbohydrate and ion accumulation of diverse perennial ryegrass accessions to increasing salinity. *Scientia Horticulturae* 154:73–81.
36. Ciampitti*, I.A., J.J. Camberato, S.T. Murrell, and T.J. Vyn. 2013. Maize nutrient accumulation and partitioning in response to plant density and nitrogen rate: I. Macronutrients. *Agron. J.* 105:783–795.
35. Terry*, R., P.T. Marquardt, J.J. Camberato, and W.G. Johnson. 2012. The influence of nitrogen timing and volunteer corn interference on hybrid corn. *Weed Sci.* 60:510-515.
34. Mickelbart*, M.V., M.J. Gosney, J. Camberato, and K.M. Stanton. 2012. Soil pH effects on growth of *Spiraea alba* Du Roi and *Spiraea tomentosa* L. *HortScience* 47:902–906.
33. Terry*, R., P.T. Marquardt, J.J. Camberato, and W.G. Johnson. 2012. The effect of plant nitrogen concentration on the response of glyphosate-resistant corn hybrids and their progeny to clethodim and glufosinate. *Weed Sci.* 60:121-125.
32. Winzeler*, H. Edwin, P.R. Owens, B.C. Joern, J.J. Camberato, B.D. Lee, D.E. Anderson, and D.R. Smith. 2008. Potassium fertility and terrain attributes in a Fragiudalf drainage catena. *Soil Sci. Soc. Am. J.* 72:1311-1320.
31. Westphal*, A., L.J. Xing, N.L. Snyder, and J. Camberato. 2008. Effect of inoculations with mycorrhizal fungi of soil-less potting mixes during transplant production on watermelon growth and early fruit yield. *HortScience* 34:354-360.
<http://hortsci.ashspublications.org/cgi/content/full/43/2/354?ijkey=yWDPzK3jCydB4VI&keytyp e=ref>
30. Camberato*, J.J., P.D. Peterson, and S. B. Martin. 2006. Salinity and salinity tolerance alter rapid blight disease occurrence. Online. *Applied Turfgrass Science* doi:10.1094/ATS-2006-0213-01-RS. <http://www.plantmanagementnetwork.org/pub/ats/research/2006/salinity/>

29. McCarty*, L.B., M.F. Gregg, J.E. Toler, J.J. Camberato, and H.S. Hill. 2005. Minimizing thatch and mat development in a newly seeded creeping bentgrass golf green. *Crop Sci.* 45:1529-1535.
28. Peterson*, P. D., S. B. Martin, and J. J. Camberato. 2005. Tolerance of cool-season turfgrasses to rapid blight disease. Online. *Applied Turfgrass Science* doi:10.1094/ATS-2005-0328-01-RS.
27. Li, Jianfeng, S. Bruce Martin*, Steven N. Jeffers, Ralph A. Dean, and James J. Camberato. Genetic variation among *Rhizoctonia solani* isolates from warm-season turfgrasses. 2005. *Intl. Turfgrass Soc. Res. J.* 10:230-236.
26. Royals II, John K., S. Bruce Martin*, James J. Camberato, and Steven N. Jeffers. 2005. Development and evaluation of strategic fungicide programs for control of summer diseases in creeping bentgrass. *Intl. Turfgrass Soc. Res. J.* 10:237-246.
25. Camberato*, J.J., and S. B. Martin. 2004. Salinity slows germination of rough bluegrass. *HortScience* 39:394-397.
24. Toler, J.E., E.C. Murdock*, and J.J. Camberato. 2004. Starter fertilizer effects on cotton development and weed interference [Online]. *J. Cotton Sci.* 8:33-41. Available at <http://journal.cotton.org/2004/issue01/pdf/jcs04i1-5.pdf>
23. Jackson*, B.P., P.M. Bertsch, M.L. Cabrera, J.J. Camberato, J.C. Seaman, and C.W. Wood. 2003. Trace element speciation in poultry litter. *J. Environ. Quality* 32:535-540.
22. Bunnell, B.T., L.B. McCarty*, R.B. Dodd, H.S. Hill, and J.J. Camberato. 2002. Creeping bentgrass growth response to elevated soil carbon dioxide. *HortScience* 37:367-370.
21. Camberato*, J.J., S.B. Martin, and A.V. Turner. 2001. Fungicides affect rough bluegrass germination and seedling development. *Intl. Turfgrass Soc. Res. J.* 9:649-654.
20. Martin*, S.B., J.J. Camberato, and L. Mudge. 2001. Influence of spring-applied preemergence herbicides and nematicides on bermudagrass in nematode-infested soil. *Intl. Turfgrass Soc. Res. J.* 9:780-786.
19. Liu, C., J.J. Camberato*, S. Bruce Martin, and Amy Turner. 2001. Rough bluegrass germination varies with temperature and cultivar/seed lot. *HortScience* 36:153-156.
18. Bauer*, P.J., O.L. May, and J.J. Camberato. 1998. Planting date and potassium fertility effects on cotton yield and fiber properties. *J. Prod. Agric.* 11:415-420.
17. Lippert*, R.M., O. Plank, J. Camberato and J. Chastain. February, 1998. Regional extension in-service training via the internet. *J. Extension.* <https://www.joe.org/joe/1998february/a3.php>

16. Cox, A.E., J.J. Camberato*, and B.R. Smith. 1997. Phosphate availability and inorganic transformation in an alum sludge-affected soil. *J. Environ. Quality* 26:1393-1398.
15. Pan*, W.L., J.J. Camberato, W.A. Jackson, E.J. Kamprath, and R.H. Moll. 1995. Altering source-sink relationships in prolific maize hybrids: Consequences for N uptake and remobilization. *Crop Science* 35:836-845.
14. Frederick*, J.R., and J.J. Camberato. 1995. Water and nitrogen effects on winter wheat in the southeastern Coastal Plain. I. Grain yield and kernel traits. *Agron. J.*87:521-526.
13. Frederick*, J.R., and J.J. Camberato. 1995. Water and nitrogen effects on winter wheat in the southeastern Coastal Plain. II. Physiological responses. *Agron. J.*87:527-533.
12. Camberato*, J.J., and J.R. Frederick. 1994. Residual maize fertilizer nitrogen availability to wheat on the southeastern Coastal Plain. *Agron. J.* 86:962-967.
11. Frederick*, J.R., and J.J. Camberato. 1994. Leaf net CO₂-exchange rate and associated leaf traits of winter wheat grown with various spring nitrogen fertilization rates. *Crop Science* 34:432-439.
10. Bauer*, P.J., J.J. Camberato, and S.H. Roach. 1993. Cotton yield and fiber quality response to green manures and nitrogen. *Agron. J.* 85:1019-1023.
9. Camberato*, J.J., B.R. Bock, and S.R. Cannon. 1992. Enhanced ammonium supply, soil pH, and electrical conductivity effects on spring wheat growth. *J. Plant Nutr.* 15:1291-1303.
<http://dx.doi.org/10.1080/01904169209364396>
8. Camberato*, J.J., and B.R. Bock. 1990. Spring wheat response to enhanced ammonium supply: I. Dry matter and nitrogen content. *Agron. J.* 82:463-467.
7. Camberato*, J.J., and B.R. Bock. 1990. Spring wheat response to enhanced ammonium supply: II. Tillering. *Agron. J.* 82:467-473.
6. Camberato*, J.J., E.J. Kamprath, R.H. Moll, and W.A. Jackson. 1989. Apical and subapical earshoot development of prolific maize hybrids (*Zea mays* L.): The role of nitrogen. *Maydica* 34:309-317.
5. Camberato*, J.J., and B.R. Bock. 1989. Response of grain sorghum to enhanced ammonium supply. *Plant and Soil* 113:79-83.
<http://link.springer.com/content/pdf/10.1007%2F002181924.pdf>
4. Vepraskas*, M.J., P.A. McDaniel, and J.J. Camberato. 1988. Teaching soil morphology to introductory soil science students. *J. of Agron. Educ.* 17:93-96.

3. Pan*, W.L., J.J. Camberato, W.A. Jackson, and R.H. Moll. 1986. Utilization of previously accumulated and concurrently absorbed nitrogen during reproductive growth in maize (*Zea mays* L.): Influence of prolificacy and nitrogen source. *Plant Physiol.* 82:247-253.

2. Camberato*, J.J., and E.J. Kamprath. 1986. Solubility of adsorbed sulfate in Coastal Plain soils. *Soil Sci.* 142:211-213.

1. Oates*, K.M., J.J. Camberato, and M.J. Vepraskas. 1984. A laboratory exercise using the microcomputer to determine recommendations and least-cost fertilizer blends. *J. of Agron. Educ.* 13:50-53.

Review Articles

2. Camberato*, J.J., B. Gagnon, D.A. Angers, M. Chantigny, and W.L. Pan. 2006. Pulp and paper mill byproducts as plant nutrient sources and soil amendments. *Can. J. Soil Sci.* 86:641-653.

1. Stowell*, L.J., S.B. Martin, M. Olsen, D. Bigelow, M. Kohout, P.D. Peterson, J. Camberato, and W.D. Gelernter. 2005. Rapid blight: A new plant disease. *APS Net Feature*.
<http://www.apsnet.org/online/feature/rapid/>

Book Chapters

13. Camberato, J.J. 2012. Bioavailability of nitrogen. pp. 11-1 – 11-14. *In Handbook of Soil Sciences: Resource Management and Environmental Impacts, 2nd Edition.* (ed.) P.M. Huang et al., CRC Press, Boca Raton, FL.

12. Camberato, J.J., and W.L. Pan. 2012. Calcium, magnesium, sulfur, and silicon. pp. 11-47 – 11-61. *In Handbook of Soil Sciences: Resource Management and Environmental Impacts, 2nd Edition.* (ed.) P.M. Huang et al., CRC Press, Boca Raton, FL.

11. Peterson, P.D., S. B. Martin, and J. J. Camberato. 2007. Current understanding and management of rapid blight disease on turfgrasses. pp. 237-244. *In Handbook of Turfgrass Management and Physiology*, (ed.) M. Pessaraki, CRC Press, Boca Raton, FL.

10. McCarty, Bert, and Jim Camberato. 2004. Soil chemical properties. p. 97-125. *In Best golf course management practices. 2nd Edition.* (ed.) L.B. McCarty, Prentice Hall, Upper Saddle River, NJ.

9. McCarty, Bert, Jim Camberato, and L. Ray Hubbard, Jr. 2004. Soil mineral properties and drainage. p. 127-169. *In Best golf course management practices. 2nd Edition* (ed.) L.B. McCarty, Prentice Hall, Upper Saddle River, NJ.

8. McCarty, Bert, Daniel C. Bowman, and Jim Camberato. 2004. Water management in turf. p. 351-377. *In Best golf course management practices. 2nd Edition* (ed.) L.B. McCarty, Prentice Hall, Upper Saddle River, NJ.

7. McCarty, Bert, Daniel C. Bowman, and Jim Camberato. 2004. Irrigation water quality. p. 379-408. *In Best golf course management practices. 2nd Edition* (ed.) L.B. McCarty, Prentice Hall, Upper Saddle River, NJ.
6. McCarty, Bert, and Jim Camberato. 2001. Irrigation water quality. p. 281-303. *In Best golf course management practices.* (ed.) L.B. McCarty, Prentice Hall, Upper Saddle River, NJ.
5. Bowman, Daniel C., Bert McCarty, and Jim Camberato. 2001. Water management in turf. p. 261-280. *In Best golf course management practices.* (ed.) L.B. McCarty, Prentice Hall, Upper Saddle River, NJ.
4. McCarty, Bert, and Jim Camberato. 2001. Soil mineral properties. p. 96-103. *In Best golf course management practices.* (ed.) L.B. McCarty, Prentice Hall, Upper Saddle River, NJ.
3. Camberato, J.J., and W.L. Pan. 1999. Calcium, magnesium, and sulfur. p. d53-d69. *In Handbook of soil science.* (ed.) M.E. Sumner, CRC Press, Boca Raton, FL.
2. Camberato, J.J., E.D. Vance, and A.V. Someshwar. 1997. Composition and land application of paper manufacturing residuals. *In Uses of by-products and wastes in agriculture.* (eds.) H.C. MacKinnon and J.E. Rechcigl, ACS Press. p. 185-203.
1. Mikkelsen, R.L., and J.J. Camberato. 1995. Potassium, sulfur, lime, and micronutrient fertilizers. P. 109-138. *In J.E. Rechcigl (ed.) Soil amendments and environmental quality.* CRC Press, Boca Raton, FL.

Proceedings Papers (2015-2020)

Bean, G.M., N.R. Kitchen, J.J. Camberato, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and P.C. Scharf. 2018. Corn nitrogen fertilizer recommendation models based on soil hydrologic groups aid in predicting economically optimal nitrogen rates. *In Proceedings of the 14th International Conference on Precision Agriculture*, June 24-27, Montreal, Quebec, Canada.

<https://www.ispag.org/proceedings/?action=abstract&id=4962>

Ransom, C., N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2018. Improving corn nitrogen rate recommendations through tool fusion. *In Proceedings of the 14th International Conference on Precision Agriculture*, June 24-27, Montreal, Quebec, Canada.

<https://www.ispag.org/proceedings/?action=abstract&id=5106>

N.R. Kitchen, M.A. Yost, C.J. Ransom, G. Bean, J. Camberato, P. Carter, R. Ferguson, F. Fernandez, D. Franzen, C. Laboski, E. Nafziger, and J. Sawyer. 2018. Utilizing weather, soil, and plant condition for predicting corn yield and nitrogen fertilizer response. *In Proceedings of the 14th International Conference on Precision Agriculture*, June 24-27, Montreal, Quebec, Canada.

<https://www.ispag.org/proceedings/?action=abstract&id=5109>

Hornaday, C., J.J. Camberato, and R.L. Nielsen. 2016. Response of continuous corn to varying rates and placements of starter fertilizer. *In* Proc. of the 46th North Central Ext.-Ind. Soil Fertility Conf., Des Moines, IA Nov. 2-3, 2016. 32:220-224.

<http://extension.agron.iastate.edu/nce/ncepdfs/2016/ncsfc%202016%20hornaday%20pg220.pdf>

Lee, J., J.J. Camberato, and R.L. Nielsen. 2016. Starter fertilizer slows the movement of corn roots across the row. *In* Proc. of the 46th North Central Ext.-Ind. Soil Fertility Conf., Des Moines, IA Nov. 2-3, 2016. 32:215-219.

<http://extension.agron.iastate.edu/nce/ncepdfs/2016/ncsfc%202016%20lee%20pg215.pdf>

Moser, M., R.L. Nielsen, and J.J. Camberato. 2016. Residual effects of nitrogen fertilization on soil nitrogen pools and corn growth. *In* Proc. of the 46th North Central Ext.-Ind. Soil Fertility Conf., Des Moines, IA Nov. 2-3, 2016. 32:204-208.

<http://extension.agron.iastate.edu/nce/ncepdfs/2016/ncsfc%202016%20moser%20pg204.pdf>

Shafer, M.E. J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, R.L. Nielsen, J.E. Sawyer, and J. Shanahan. 2016. Variation in internal N efficiency of corn and impact on yield-goal based N recommendations. *In* Proc. of the 46th North Central Ext.-Ind. Soil Fertility Conf., Des Moines, IA Nov. 2-3, 2016. 32:209-214.

<http://extension.agron.iastate.edu/nce/ncepdfs/2016/ncsfc%202016%20shafer%20pg209.pdf>

Ransom, C., N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J. Shanahan, and J.E. Sawyer. 2015. Which corn nitrogen fertilization rate tool performs the best in the Midwest? *In* Proc. of the 45th North Central Ext.-Ind. Soil Fertility Conf., Des Moines, IA Nov. 4-5, 2015. 31:214.

<http://extension.agron.iastate.edu/nce/ncepdfs/2015/ncsfc%202015%20ransom%20pg214.pdf>

Laboski, C.A.M., J.J. Camberato, and J.E. Sawyer. 2015. Evaluation of Adapt-N in the Corn Belt. Proc. of the 2015 Wisconsin Crop Management Conf., Madison, WI, Jan. 13-15. 54:91-98.

Published Abstracts (2015-2020)

143. Li, D., Y. Miao, F.G. Fernández, N.R. Kitchen, C.J. Ransom, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J.F. Shanahan. 2020. Developing an innovative in-season and site-specific nitrogen recommendation strategy with machine learning for US Midwest corn production. 15th International Conference on Precision Agriculture.

142. Morales Ona, A.G., R.L. Nielsen, and J.J. Camberato. 2019. Integration of satellite and UAV aerial imagery to characterize spatial phenotypic responses of corn to sulfur fertilizer. *In* Agronomy Abstracts 307-1.

<https://scisoc.confex.com/scisoc/2019am/meetingapp.cgi/Paper/119962>

141. Morales Ona, A.G., R.L. Nielsen, and J.J. Camberato. 2019. Effects of removing background soil reflectance pixels from vegetative index maps for characterization of corn responses to experimental treatments. *In Agronomy Abstracts* poster 1338. <https://scisoc.confex.com/scisoc/2019am/meetingapp.cgi/Paper/119973>
140. Wiethorn, M.A. C.J. Penn, and J.J. Camberato. 2019. A method for automated large-scale cultivation of maize to full maturity in an artificial environment. *In Agronomy Abstracts* 51-4. <https://scisoc.confex.com/scisoc/2019am/meetingapp.cgi/Paper/119551>
139. Ransom, C. N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D.W. Franzen, C.A.M. Laboski, E. Nafziger, J.E. Sawyer, and J. Shanahan. 2019. Integrating remote sensing and crop growth models for an improved regional corn nitrogen recommendation. *In Agronomy Abstracts* 237-8. <https://scisoc.confex.com/scisoc/2019am/meetingapp.cgi/Paper/118781>
138. Laboski, C.A.M, C. Bandura, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D.W. Franzen, N.R. Kitchen, E. Nafziger, J.E. Sawyer, and J. Shanahan. 2019. Is NUE a useful sustainability metric? *In Agronomy Abstracts* 141-6. <https://scisoc.confex.com/scisoc/2019am/meetingapp.cgi/Paper/121854>
137. Clark, J., F.G. Fernández, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, N.R. Kitchen, C.A.M. Laboski, E. Nafziger, J.E. Sawyer, and J. Shanahan. 2019. When to single or split apply nitrogen fertilizer to corn. *In Agronomy Abstracts* 214-3. <https://scisoc.confex.com/scisoc/2019am/meetingapp.cgi/Paper/118478>
136. Wade, J., S. Culman, J.A.R. Logan, M.S. Demyan, M. Ruark, A.P. Mallarino, J.J. Camberato, H. Poffenbarger, J.H. Grove, J.M. McGrath, and D.E. Kaiser. 2019. Does a healthy soil really require less N and P fertilizer in corn-soybean agroecosystems? Moving from correlation to causation. *In Agronomy Abstracts* 62-10. <https://scisoc.confex.com/scisoc/2019sssa/meetingapp.cgi/Paper/116432>
135. Kitchen, N.R., C. Ransom, G.M. Bean, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D.W. Franzen, C.A.M. Laboski, E. Nafziger, and J.E. Sawyer. 2019. Corn nitrogen fertilizer recommendations: Always a toolbox, or can we get to a tool? *In Agronomy Abstracts* 34-3. <https://scisoc.confex.com/scisoc/2019sssa/meetingapp.cgi/Paper/116115>
134. Kitchen, N.R., C. Ransom, M.A. Yost, J.E. Sawyer, D.B. Myers, J. Qin, C.A.M. Laboski, D.W. Franzen, E. Nafziger, F.G. Fernández, J.J. Camberato, and R.B. Ferguson. 2018. Steps to improve fickle corn economic optimal N rate calculations. *In Agronomy Abstracts* 129-4. <https://scisoc.confex.com/scisoc/2018am/meetingapp.cgi/Paper/112633>
133. Ona, A.G.M., R.L. Nielsen, and J.J. Camberato. 2018. Evaluation of the relative merits of vegetation indices based on reflectance data from several sensors mounted on small unmanned aerial systems for identifying and characterizing phenotypic responses of corn to experimental treatments. *In Agronomy Abstracts* poster no. 1133. <https://scisoc.confex.com/scisoc/2018am/meetingapp.cgi/Paper/112744>

132. Clark, J., F.G. Fernández, K.S. Veum, J.J. Camberato, P.R. Carter, R.B. Ferguson, D. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2018. Estimating nitrogen fertilizer range using mineralizable- and soil nitrate-nitrogen. *In* *Agronomy Abstracts* 256-8. <https://scisoc.confex.com/scisoc/2018am/meetingapp.cgi/Paper/111701>
131. G.M. Bean, N.R. Kitchen, J.J. Camberato, R.B. Ferguson, F.G. Fernández, D. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and K. Veum. 2018. Using USDA-NRCS soil hydrologic groups to enhance corn nitrogen fertilizer recommendations. *In* *Agronomy Abstracts* 141-4. <https://scisoc.confex.com/scisoc/2018am/meetingapp.cgi/Paper/112268>
130. Clark, J., F.G. Fernández, K.S. Veum, J.J. Camberato, P.R. Carter, R.B. Ferguson, D. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2018. Can an estimate of mineralizable nitrogen improve nitrogen sufficiency indexes? *In* *Agronomy Abstracts* poster no. 1071. <https://scisoc.confex.com/scisoc/2018am/meetingapp.cgi/Paper/111702>
129. Nielsen, R.L., and J.J. Camberato. 2018. Experiences with collaborative field scale research in Indiana. *In* *Agronomy Abstracts* 156-3. <https://scisoc.confex.com/scisoc/2018am/meetingapp.cgi/Paper/111358>
128. Ransom, C., N.R. Kitchen, H. Yang, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernández, D. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2018. Improving the Maize-N nitrogen recommendation tool across the U.S. Corn Belt. *In* *Agronomy Abstracts* 141-3. <https://scisoc.confex.com/scisoc/2018am/meetingapp.cgi/Paper/111381>
127. Camberato, J. 2017. Eugene J. Kamprath – An introduction to the man and his career. *In* *Agronomy Abstracts* 107363.
126. Camberato, J., M. Shafer, P.R. Carter, R.B. Ferguson, F.G. Fernández, D. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, R.L. Nielsen, J. Shanahan, and J.E. Sawyer. 2017. Soil and environmental factors affecting internal N efficiency of maize. *In* *Agronomy Abstracts* 60-5.
125. Clark, J., F.G. Fernandez, J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2017. Why the different responses between single and split nitrogen applications? *In* *Agronomy Abstracts* 35-2.
124. Graf, K., J. Camberato, K. Wise, and S. Casteel. 2017. Effects of soybean release year and intensive management on seed fill. *In* *Agronomy Abstracts* 46-5.
123. Ji, Zhongjie, C. Zhang, J.J. Camberato, and Y. Jiang. 2017. Application of plant growth regulators on growth and physiological responses of perennial ryegrass under salinity stress. *In* *Agronomy Abstracts* 106391.
122. Kissick, A., J.J. Camberato, and R.L. Nielsen. 2017. Modelling approaches for determining relationships between crop yield and landscape features. *In* *Agronomy Abstracts* 248-6.

121. Kissick, A., J.J. Camberato, R.L. Nielsen, M. Leader, and H. Kok. 2017. Identification of nitrogen management strategies in Indiana, USA that impact corn stalk nitrate concentrations. *In Agronomy Abstracts* 130-1.
120. Lee, J., J.J. Camberato, and R.L. Nielsen. 2017. Visual estimation of root density and depth in maize using perforated cylinders and a video recording device equipped with a long borescope. *In Agronomy Abstracts* 106894.
119. Lee, J., J.J. Camberato, and R.L. Nielsen. 2017. Plant growth and yield response of maize to in-furrow biological and plant growth regulator products. *In Agronomy Abstracts* 215-9.
118. Mueller, S.M., J. Camberato, C.D. Messina, J. Shanahan, H. Zhang, and T.J. Vyn. 2017. Physiological strategies for yield preservation despite delayed nitrogen availability in modern maize hybrids. *In Agronomy Abstracts* 106787.
117. Mueller, S.M., J. Camberato, C.D. Messina, J. Shanahan, H. Zhang, and T.J. Vyn. 2017. Split, late-season N applications increase nitrogen recovery efficiency in maize. *In Agronomy Abstracts* 104-6.
116. Pan, W.L., T.M. Maaz, and J. Camberato. 2017. Nitrogen use efficiency analysis from soil fertility, breeding and physiology perspectives. *In Agronomy Abstracts* 257-4.
115. Pasley, H. J. Cairns, M. Olsen, E.J. Kladivko, J. Camberato, and T.J. Vyn. 2017. Soil macro- and micro-nutrient pools' role in yield and nitrogen use efficiency responses of maize hybrids to N in Africa. *In Agronomy Abstracts* 35-4.
114. Pasley, H. J. Cairns, M. Olsen, J. Camberato, and T.J. Vyn. 2017. Maize composition in Africa. *In Agronomy Abstracts* 230-2.
113. Ransom, C., N.R. Kitchen, G.M. Bean, J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2017. Fusing corn nitrogen recommendation tools for an improved canopy reflectance sensor performance. *In Agronomy Abstracts* 105956.
112. Shanahan, J., N.R. Kitchen, C. Ransom, C. Bandura, G.M. Bean, J. Camberato, P.R. Carter, J. Clark, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and M. Shafer. 2017. Overview of a public-industry partnership for enhancing corn nitrogen research and datasets. *In Agronomy Abstracts* 60-1.
111. Yao, Y., C. Zhang, J.J. Camberato, and Y. Jiang. 2017. Physiological, and molecular responses of perennial ryegrass to low nitrogen stress. *In Agronomy Abstracts* 106910.
110. Kissick, A. L., J. Camberato, and R. Nielsen. Relationships between crop yield and landscape features. 7th Asian – Australasian Conference on Precision Agriculture, Hamilton, New Zealand, October 2017.

109. Pasley, H., J. Cairns, M. Zaman-Allah, M. Osen, J. Camberato, and T.J. Vyn. The price of soil nitrogen depletion in Kenya and Zimbabwe: A cost-benefit analysis. Poster presentation at 1st World Conference on Soil and Water Conservation under Global Change. June 12-16, 2017. Lleida, Spain.
108. Bean, G.M., N.R. Kitchen, R.B. Ferguson, J.J. Camberato, C.A.M. Laboski, J.E. Sawyer, F.G. Fernandez, D.W. Franzen, E.D. Nafziger, P.R. Carter, and J. Shanahan. 2016. Fusing regional soil and weather variability with site-specific canopy reflectance for improved in-season N fertilizer recommendation. *In Agronomy Abstracts* 102466.
107. Chen, K., T.J. Vyn, J.J. Camberato, M.R. Tuinstra, M. Tollenaar, and S. Kumudini. 2016. Maize genetic improvement in density and nitrogen stress tolerance traits from 1967 to 2005. *In Agronomy Abstracts* 100378.
106. Clark, J., F.G. Fernandez, J.J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, J. Shanahan, and K.S. Veum. 2016. Can the anaerobic potentially mineralizable nitrogen test improve predictions of fertilizer nitrogen rates in the Cornbelt? *In Agronomy Abstracts* 100940.
105. Hettinga, J., R.L. Nielsen, and J.J. Camberato. 2016. Comparing management zones created from historical spatial corn and soybean yield data. *In Agronomy Abstracts* 100821.
104. Hornaday, C., R.L. Nielsen, and J.J. Camberato. 2016. Starter fertilizer in continuous corn production in the Midwest. *In Agronomy Abstracts* 101179.
103. Lee, J., J.J. Camberato, and R.L. Nielsen. 2016. Using precision technologies to conduct large scale on-farm research. *In Agronomy Abstracts* 101217.
102. Li, Y., X. Song, G. Nie, M. Taylor, J.J. Camberato, and Y. Jiang. 2016. Genetic mechanism of nitrogen use efficiency in perennial ryegrass. *In Agronomy Abstracts* 100459.
101. Mueller, S.M., J.J. Camberato, J. Shanahan, and T.J. Vyn. 2016. Organ-specific N dynamics for maize plants at varying N stress in the critical period. *In Agronomy Abstracts* 100402.
100. Pasley, H., T.J. Vyn, J.J. Camberato, J. Cairns, M. Olsen, M.A. Zaman-Allah, and B. Das. 2016. Potential Soil N Depletion By Maize Hybrids Differing in N Use Efficiency in Sub-Saharan Africa. *In Agronomy Abstracts* 100472.
99. Pasley, H., M. Olsen, B. Das, J.J. Camberato, and T.J. Vyn. 2016. Quantifying net N balance and soil N pools following maize hybrids with high N use efficiency in Sub-Saharan Africa. *In Agronomy Abstracts* 100706.
98. Ransom, C., G.M. Bean, N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2016.

Corn nitrogen fertilization rate tools compared over eight Midwest states. 2016. In *Agronomy Abstracts* 102316.

97. Shafer, M., J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, R.L. Nielsen, J.E. Sawyer, and J. Shanahan. 2016. Variability for internal N efficiency of maize and the impact on N fertilizer recommendations. *In Agronomy Abstracts* 100579.

96. Woodyard, J.D., E.J. Kladviko, L.A. Hoagland, and J.J. Camberato. 2016. Cover crop and no-tillage effects on soil health indicators and arbuscular mycorrhizal fungi diversity in Indiana. *In Agronomy Abstracts* 100102.

95. Brooks, S.M., J.J. Camberato, J. F. Shanahan, and T.J. Vyn. 2015. Earshoot N dynamics during the critical period for maize. *ASA Meetings Abstract #139-13*. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper93305.html>

94. Chen, K., T.J. Vyn, M. Tollenaar, S.V. Kumudini, J.J. Camberato, and M.R. Tuinstra. 2015. Plant population influences on post-silking N uptake vary with hybrid eras and N rates. *ASA Meetings Abstract #141-1*. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper94111.html>

93. Kitchen, N.R., J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2015. Public-private partnering for improving performance of corn nitrogen fertilization tools. *ASA Meetings Abstract #204-15*. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper93827.html>

92. Clark, J.D., F.G. Fernandez, J. Camberato, P.R. Carter, R.B. Ferguson, D.W. Franzen, N.R. Kitchen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2015. What plant and soil testing from 16 sites in eight midwestern states tells us about split nitrogen applications. *ASA Meetings Abstract #204-16*. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper92889.html>

91. Ransom, C., N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2015. Corn nitrogen fertilization rate tools compared over eight midwest states. *ASA Meetings Abstract #204-17*. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper93024.html>

90. Bean, G.M., N.R. Kitchen, J.J. Camberato, P.R. Carter, R.B. Ferguson, F.G. Fernandez, D.W. Franzen, C.A.M. Laboski, E.D. Nafziger, J.E. Sawyer, and J. Shanahan. 2015. Integrating soil and weather information into canopy sensor algorithms for improved corn nitrogen rate recommendation. *ASA Meetings Abstract #204-18*. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper93026.html>

89. Lee, J., J.J. Camberato, R.L. Nielsen. 2015. Increased plant population has little effect on total ovules per ear of maize. ASA Meetings Abstract #290-5. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper93963.html>
88. Hauenstein, H.L., E.J. Kladvko, and J.J. Camberato. 2015. Cover crop and no-till impacts on soil health in Indiana cropping systems. ASA Meetings Abstract #416-10. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper92937.html>
87. Pasley, H., T.J. Vyn, and J.J. Camberato. 2015. Soil N depletion by maize differing in N use efficiency in Sub-Saharan Africa. ASA Meetings Abstract #427-4. Annual Meetings Nov. 15-18, Minneapolis, MN. <https://scisoc.confex.com/scisoc/2015am/webprogram/Paper92182.html>
86. Brooks, S.M., J.J. Camberato, J. F. Shanahan, and T.J. Vyn. 2015. Earshoot N dynamics during the critical period for maize. ASTA Meetings Poster #16. ASTA Annual Meeting Dec. 7-11, Chicago, IL. <http://www.amseed.org/events/asta-css-seed-expo/seed-the-future-poster-presentations/>

Extension Circulars and Production Guides (Indiana)

- ANR-74 Converting between Mehlich-3, Bray P, and ammonium acetate soil test values. 2019. Ohioline, Ohio State Univ. Ext. Serv., Columbus. <https://ohioline.osu.edu/factsheet/anr-75>
- CROP 3135 Micronutrients for Soybean Production in the North Central Region. 2017. A.P. Mallarino, D.E. Kaiser, D.A. Ruiz-Diaz, C.A.M. Laboski, J.J. Camberato, and T.J. Vyn. Iowa State Univ. Ext. and Outreach CROP 3135, Aug. 2017.
- ID-354-W Managing Cover Crops. Checklist for Integrating Cover Crops Into Your Cropping System. E. Kladvko, R. Nielsen, S. Casteel, K. Johnson, J. Camberato, C. Krupke, W. Johnson, B. Young, and K. Wise.
- ID-353-W Managing Cover Crops. An Introduction to Integrating Cover Crops Into a Corn-Soybean Rotation. E. Kladvko, R. Nielsen, S. Casteel, K. Johnson, J. Camberato, C. Krupke, W. Johnson, B. Young, and K. Wise.
- ID-179 Corn & Soybean Field Guide, iPad version.
- ID-448 Wheat Field Guide – Soil fertility section.
- ID-317 Forage Field Guide 2nd Edition - Revised soil fertility section.
- ID-179 Corn & Soybean Field Guide 2006-2017 Editions – Revised soil fertility section annually.

PPP-97 Addressing Customer Questions and Complaints: The Basics Every Agricultural Retail Employee Should Know. F. Whitford, S. Downey, B. Bower, R. Feinberg, K. Wise, J. Camberato, S. Dlugosz, B. Nielsen, C. Krupke, M. Carrell, B. Johnson, S. Casteel, and K.L. Smith.

AY-335-W A Historical Perspective on Nitrogen Fertilizer Rate Recommendations for Corn in Indiana (1953-2011). J.J. Camberato.

<http://www.extension.purdue.edu/extmedia/AY/AY-335-W.pdf>

Category 14 Fertilizer and Manure Applicator Certification on-line training module. F. Whitford and J. Camberato. <http://www.indianasoybean.com/CAT14Tutorial/player.html>

HO-240-W Commercial Greenhouse and Nursery Production: Soil pH. M.V. Mickelbart, K.M. Stanton, J.J. Camberato, and B.D. Lee.

<http://www.extension.purdue.edu/extmedia/HO/HO-240-W.pdf>

HO-241-W Commercial Greenhouse and Nursery Production: Lowering Soil pH for Horticulture Crops. M.V. Mickelbart, K.M. Stanton, S. Hawkins, and J. Camberato.

<http://www.extension.purdue.edu/extmedia/HO/HO-241-W.pdf>

2020 Timely Extension Outputs

AgPhD – Nutrient deficiencies. 15 min. radio broadcast. 8/6/2020.

Camberato, J. 2020. Low soil moisture and compaction promote potassium deficiency. Pest&Crop Newsletter. Issue: 2020.14. 7/2/2020.

<https://extension.entm.purdue.edu/newsletters/pestandcrop/article/low-soil-moisture-and-compaction-promote-potassium-deficiency/>

When should nitrogen be applied for corn? T.J. Bechman, Indiana Prairie Farmer, 6/16/2020.

<https://www.farmprogress.com/corn/when-should-nitrogen-be-applied-corn>

AgPhD – Timing of nitrogen applications. 15 min. radio broadcast. 6/2/2020.

Camberato, J., and B. Nielsen. 2020. Choosing the right nitrogen rate for corn is important to profitability. Pest&Crop Newsletter. Issue: 2020.6. 5/8/2020.

<https://extension.entm.purdue.edu/newsletters/pestandcrop/article/choosing-the-right-nitrogen-rate-for-corn-is-important-to-profitability/>

AgFax: <https://agfax.com/2020/05/08/indiana-corn-choosing-right-nitrogen-rate-important-to-profitability/> 5/8/2020

A&L Great Lakes Newsletter. Utilizing nitrate and ammonium sampling to manage in-season nitrogen applications. <https://algreatlakes.com/blogs/news/utilizing-nitrate-and-ammonium-sampling-to-manage-in-season-nitrogen-applications> 4/30/2020. Utilizing data from Camberato and Nielsen.

Camberato, J., B. Nielsen, and D. Salguero. 2020. Corn response to sulfur in Indiana. Pest&Crop Newsletter. Issue: 2020.4. 4/23/2020.

<https://extension.entm.purdue.edu/newsletters/pestandcrop/article/corn-response-to-sulfur-in-indiana/>

Camberato, J., B. Nielsen, and D. Salguero. 2020. Yield response of corn to sulfur fertilizer research update. Soil Fertility Update. April, 2020.

<https://www.agry.purdue.edu/ext/corn/research/updates/CornRespSulfur.pdf>

Convert plant populations to seeding rates for corn. T.J. Bechman, Indiana Prairie Farmer, Apr. 16, 2020. <https://www.farmprogress.com/corn/convert-plant-populations-seeding-rates-corn>

Find best corn population for your farm in 2020? T.J. Bechman, Indiana Prairie Farmer, Apr. 14, 2020. <https://www.farmprogress.com/corn/find-best-corn-population-your-farm-2020>

AgPhD – Sulfur needs of crops. 15 min. radio broadcast. 4/1/2020.

Squeezing more bushels by seeding above optimum corn plant populations doesn't work. Successful Farming, March 30, 2020.

<https://www.agriculture.com/crops/corn/squeezing-more-bushels-by-seeding-above-optimum-corn-plant-populations-doesn-t-work>

What to know about changes in fertilizer standards. T.J. Bechman, Indiana Prairie Farmer, Feb. 12, 2020. Extensively quoted on Mehlich3 vs. Bray. <https://www.farmprogress.com/crops/what-know-about-changes-fertilizer-standards>

Stay ahead of corn's sulfur demand in cool spring conditions: Sulfur boosts yield in 10 out of 20 fields in Purdue trial. AdvanSix staff. Jan. 2020.

<https://www.advansix.com/ammoniumsulfate/?document=stay-ahead-of-corns-sulfur-demand-in-cool-spring-conditions-white-paper&download=1>

Starter fertilizer may boost corn yields 10 to 15 bushels per acre. By Gil Gullickson, Successful Farming, Jan. 26, 2020. <https://www.agriculture.com/crops/corn/starter-fertilizer-may-boost-corn-yields-10-to-15-bushels-per-acre>

Mastering early-season fertility. By Mosaic staff, 2020. <https://www.cropnutrition.com/resource-library/mastering-early-season-fertility>

Sulfur update for corn: Run replicated trials on your farm. By T.J. Bechman, Indiana Prairie Farmer, Jan. 16, 2020. <https://www.farmprogress.com/corn/sulfur-update-corn-run-replicated-trials-your-farm>

2019 Timely Extension Outputs

South Carolina corn: Bumper crop predicted for 2020. By Denise Attaway, Clemson University, Dec. 20, 2019. Quote based on presentation at conference.

<https://agfax.com/2019/12/20/south-carolina-corn-bumper-crop-predicted-for-2020/>

<https://www.morningagclips.com/bumper-corn-crop-predicted-for-2020/>

https://www.scnw.com/business/bumper-corn-crop-predicted-for-2020/article_a997d8ce-99ab-581d-a66b-c7f0e7ccd0b3.html

<https://cornsouth.com/production/bumper-corn-crop-predicted-for-2020/>

Develop plans for fertilizing soybeans for 2020. By T.J. Bechman, Indiana Prairie Farmer, Oct. 2, 2019. Extensively quoted on late-season K deficiency.

<https://www.farmprogress.com/soybean/develop-plans-fertilizing-soybeans-2020>

Camberato, J. and K. Johnson. 2019. Sulfur deficiency in alfalfa. Pest&Crop Newsletter. Issue: 2019.11. 5/24/2019. <https://extension.entm.purdue.edu/newsletters/pestandcrop/article/sulfur-deficiency-in-alfalfa/>

Camberato, J. 2019. To quicken corn planting, should starter fertilizer be skipped? Pest&Crop Newsletter. Issue: 2019.10. 5/24/2019.

https://extension.entm.purdue.edu/newsletters/pestandcrop/wp-content/uploads/sites/2/2019/05/PestandCrop_2019-10.pdf

Camberato, J. 2019. What we know and don't know about ammonium thiosulfate. Pest&Crop Newsletter. Issue: 2019.9. 5/17/2019.

https://extension.entm.purdue.edu/newsletters/pestandcrop/wp-content/uploads/sites/2/2019/05/PestandCrop_2019-9.pdf

Camberato, J., and B. Nielsen. 2019. Phosphorus math for dummies. Purdue Univ. Dept. Agron. Soil Fertility Update. May 9, 2019.

<https://ag.purdue.edu/agry/extension/Documents/Soil%20Fertility/Phosphorus%20Math%20for%20Dummies.pdf>

Camberato, J., and B. Nielsen. 2019. Phosphorus cost calculator (.xlsx download). Purdue Univ. Dept. Agron. Soil Fertility Update. May 9, 2019.

<https://ag.purdue.edu/agry/soilfertility/Pages/Soil-Fertility-Phosphorus.aspx>

Trials show continuous corn needs more nitrogen. T.J. Bechman, Indiana Prairie Farmer, Apr. 16, 2019.

<https://www.farmprogress.com/corn/trials-show-continuous-corn-needs-more-nitrogen>

Zero in on nitrogen rates for corn this year. T.J. Bechman, Indiana Prairie Farmer, Apr. 16, 2019.

<https://www.farmprogress.com/corn/zero-nitrogen-rates-corn-year>.

Purdue reaffirms N rate guidelines for 2019. T.J. Bechman, Indiana Prairie Farmer, Apr. 9, 2019.

<https://www.farmprogress.com/corn/purdue-reaffirms-n-rate-guidelines-2019>

Nielsen, B., J. Camberato, and J. Lee. 2019. Yield response of corn to plant population in Indiana. Pest&Crop Newsletter. Issue: 2019.1. 3/19/2019.
<https://extension.entm.purdue.edu/newsletters/pestandcrop/article/yield-response-of-corn-to-plant-population-in-indiana-2/>

Camberato, J. and B. Nielsen. 2019. Nitrogen management guidelines for corn in Indiana. Pest&Crop Newsletter. Issue: 2019.1. 3/19/2019.
<https://extension.entm.purdue.edu/newsletters/pestandcrop/article/nitrogen-management-guidelines-for-corn-in-indiana/>

Camberato, Jim, and R.L. (Bob) Nielsen. 2019. Nitrogen management guidelines for corn in Indiana. Applied Crop Research Update, March 2019.
<https://www.agry.purdue.edu/ext/corn/news/timeless/NitrogenMgmt.pdf>

Need for applied sulfur in corn is increasing in Indiana and elsewhere. AdvanSix staff. Feb. 2019. <https://www.advansix.com/ammoniumsulfate/?document=need-for-applied-sulfur-in-corn-is-increasing-in-indiana-and-elsewhere>

Extension Publications (South Carolina)

2008 South Carolina Corn Production Guide. Soil sampling. Pawel Wiatrak and Jim Camberato.
<http://www.clemson.edu/edisto/corn/fertility/>

2008 South Carolina Soybean Production Guide. Soil sampling and fertility management. Pawel Wiatrak, Jim Camberato, and Jason Norsworthy.
<http://www.clemson.edu/edisto/soybeans/fertility/>

2008 South Carolina Soybean Production Guide. Seed inoculation. Pawel Wiatrak, Jim Camberato, and Jason Norsworthy. http://www.clemson.edu/edisto/soybeans/seed_inoculation/

Extension Circulars and Production Guides

Outreach Publications and Training Materials Prior to Arriving at Purdue

Years	No.	Description
1999-2006	26	Chapters or revised chapters in Confined Animal Manure Manager Certification Program Manual for Dairy, Poultry, Swine, and Equine (printed and web-based materials). http://www.clemson.edu/camm/
2001-2004	7	Web-only Extension leaflets and slide presentations.
1999-2004	20	Trade journal Extension articles.
1990-2002	9	Chapters or revised chapters (7) in numbered Extension Circulars and Leaflets and a numbered Extension Circular.
1990-1994	13	Printed newsletter articles.

Graduate Student Education

Dr. Camberato is heavily involved in graduate education. The majority of his students are interested in obtaining an agronomist position with seed, fertilizer, and pesticide companies, thus he encourages them to obtain a broad experience in plant pathology, entomology, and weed science, as well as crop and soil sciences.

Graduate students as chair or co-chair since 2006.

Last name	First name	Degree	Co-chair	Year completed
Orjuela Diaz	Daniela	M.S.	R.L. Nielsen	Init. May 2019
Salguero Gaibor	Diana	M.S.	R.L. Nielsen	Init. Jan. 2019
Wiethorn	Matthew	M.S.	C. Penn	Init. Jan. 2018
Morales Ona	Ana Gabriela	M.S.	R.L. Nielsen	Init. Jan. 2018
Lee	Jason	Ph.D.	R.L. Nielsen	May 2020
Martinez	Alberto	Ph.D.	none	May 2019
Shafer	Matt	M.S.	none	May 2019
Pasley	Heather	Ph.D.	T. Vyn	Aug. 2018
Hettinga	John	M.S.	R.L. Nielsen	Aug. 2017
Hornaday	Cody	M.S.	R.L. Nielsen	Aug. 2017
Moser	Meghan	M.S.	none	Dec. 2016
Lee	Jason	M.S.	R.L. Nielsen	August 2015
Early	Brian	Non-thesis M.S.	R.L. Nielsen	May 2015
Smith	Ronald	Non-thesis M.S.	none	May 2015
Menelas	Blucher	Ph.D.	B.C. Joern	May 2014
Geis	Jason	M.S.	R.L. Nielsen	May 2014
Zhao	Chun	Ph.D.	B.C. Joern	Dec. 2013
Edwards	Ryan	Non-thesis M.S.	R.L. Nielsen	Dec. 2013
Maloney	Stephen	M.S.	S. Casteel	Dec. 2012
Ferrel	Andrew	M.S.	none	August 2012
Miller	Eric	M.S.	R.L. Nielsen	May 2012
Emmert	Daniel	M.S.	none	May 2009
Johnson	Dustin	M.S.	R.L. Nielsen	Init. Aug. 2008, DNF

Graduate students as committee member since 2006.

Last name	First name	Degree	Department	Major prof.	Completion
Wehrman	Adam	M.S.	Agronomy	R. Turco	On-going
Schilling	Christina	Ph.D.	Agronomy	L. Lee	On-going
Olmedo Pico	Lia	Ph.D.	Agronomy	T. Vyn	On-going
Lacey	Corey	Ph.D.	Agronomy	S. Armstrong	On-going
Triviño	Narda	M.S.	Horticulture	L. Hoagland	2020
Minai	Joshua	Ph.D.	Agronomy	D. Schulze	2019
Miller	Houston	M.S.	Agronomy	S. Armstrong	2019
Lazcano	Rooney	Ph.D.	Agronomy	M. Mashtare	2019
Benally	Nicole	M.S.	Agronomy	E. Kladvko	2018
Graf	Kathryn	M.S.	Agronomy	S. Casteel	2018
Mueller	Sarah	Ph.D.	Agronomy	T. Vyn	2018

Martin	Joseph	Ph.D.	Agronomy	C. Johnston	2018
Ji	Zhongjie	M.S.	Agronomy	Y. Jiang	2018
Yao	Yanyu	M.S.	Agronomy	Y. Jiang	2018
Woodyard	Jennifer	M.S.	Agronomy	E. Kladivko	2018
McMillan	John	Ph.D.	Agronomy	K. Johnson	2016
Chen	Keru	Ph.D.	Agronomy	T. Vyn	2016
Rorick	Joe	M.S.	Agronomy	E. Kladivko	2016
Romero	Paty	Ph.D.	Plant Pathology	K. Wise	2016
Hauenstein	Holland	M.S.	Agronomy	E. Kladivko	2015
Silva	Amanda	M.S.	Agronomy	T. Vyn	2015
Frank	Trevor	M.S.	Agronomy	E. Kladivko	2015
Scott	John	M.S.	Agronomy	S. Casteel	2015
Alford	Sara	M.S.	Agronomy	E. Kladivko	2015
Xu	Min	M.S.	Agronomy	B. Joern	2014
Graper	Donald J.	M.S.	Agronomy	S. Casteel	2014
Long	Philip	M.S.	Agronomy	S. Casteel	2013
Kovacs	Peter	Ph.D.	Agronomy	T. Vyn	2013
Horton	Kaylissa	M.S.	Agronomy	E. Kladivko	2013
Tudor	Tracy	M.S.	Agronomy	C. Bigelow	2013
Elias	Ani	Ph.D.	Agronomy/Statistics	Tuinstra/ Doerge	2013
Suarez	Edwin	M.S.	Agronomy	E. Kladivko	2013
Marquardt	Paul	Ph.D.	Botany and Plant Pathology	B. Johnson	2013
Xia	Yanbing	Ph.D.	Agronomy	T. Vyn	2012
Ciampitti	Ignacio	Ph.D.	Agronomy	T. Vyn	2012
Wilson	Eric	M.S.	Agronomy	S. Casteel	2012
Leeck	Rosalind	Non- thesis	Ag. Econ.	N. Olynk	2012
Terry	Ryan	M.S.	Botany and Plant Pathology	B. Johnson	2011
Hashami	Ziauddin	M.S.	Agronomy	B. Joern	2011
Amini	Mohammad	M.S.	Agronomy	E. Kladivko	2011
Xia	Yanbing	M.S.	Agronomy	T. Vyn	2010
Urick	Danielle	M.S.	Agricultural Economics	N. Olynk	2010
Nemitz	Jared	M.S.	Agronomy	C. Bigelow	2009
Moeller	Adam	M.S.	Agronomy	C. Bigelow	2008
Winzeler	Edwin	M.S.	Agronomy	P. Owens	2008
Boomsma	Christopher	Ph.D.	Agronomy	T. Vyn	2007
Cánepa	Matias	M.S.	Agronomy	T. Vyn	2007
Canegallo	Alejandro	M.S.	Ent., Soils and Plant Sci., Clemson Univ.	B. Martin	2006

Prior to arriving at Purdue Dr. Camberato chaired the committee of one student in Agronomy and Soils and served as a committee member for 16 students in various disciplines.

Committee role	No./Degree	Department
Chairman	1 M.S.	Agronomy and Soils
Member	2 M.S. 2 Ph.D.	Agronomy and Soils
	4 M.S. 1 Ph.D.	Plant Pathology
	2 M.S. 1 Ph.D.	Horticulture
	2 M.S. 2 Ph.D.	Biosystems Engineering, Forestry, Environmental Toxicology