

Juan Landivar-Bowles

Professor and Center Director

Texas A&M AgriLife Research and Extension Center's Weslaco & Corpus Christi

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<https://ccag.tamu.edu/research-project/crop-physiology/>



EDUCATION AND TRAINING:

Ph.D. 1987 Crop Physiology, Mississippi State University, Mississippi State, MS. Major Prof. D. N. Baker and J.N. Jenkins, Diss. Title – Apparent photosynthesis as a function of leaf age and growth analysis of cotton genotypes with differences in maturities.

M.S. 1979 Plant Breeding, Mississippi State University, Mississippi State, MS. Major Prof. D. N. Baker and J. N. Jenkins. Thesis Title – The application of the cotton simulation model GOSSYM in genetic feasibility studies.

B.S. 1976 Crop Science, Mississippi State University, MS.

A.S. 1974 Agronomy, State Univ. of New York, Agricultural and Tech. College, Alfred, N.Y.

RESEARCH AND PROFESSIONAL EXPERIENCE:

2008–Present Center Director, Texas A&M AgriLife Research, Corpus Christi, and Weslaco.

Provide visionary leadership for the Center, recognizing and responding to challenges in agricultural and natural resources through research and public service. Serve as a catalyst for the design and implementation of relevant, innovative, cutting-edge research programs and multi-disciplinary research teams; build and promote productive partnerships and relationships with relevant organizations, state and federal agencies, stakeholders and private industry.

1998–2008 Director of technical Services for South America. Delta and Pine Land International

(DPL). Serve as Director of technical services for DPL in South America. Manage or supervise variety and product development testing, product information development marketing strategies and budgets for a team of Agronomists in Argentina, Bolivia, Brazil and Paraguay. Coordinate product development and budgets for Colombia and Peru.

1989–1998 Associate Professor-Research Crop Physiologist.

Cropping Systems Research Program. Texas A&M University Research Center. Corpus Christi, TX. January 1989 to date. Serve as Project Leader in carrying out collaborative farming systems research with TAES scientists. Conduct research on crop production systems, including variety selection, use of growth regulators, plant nutrition, harvest aids, tillage, and crop rotation sequences.

1986–1988 Research Agronomist.

Cotton Modeling and Physiology Research Program, Miss. State Univ., Oct. 1986 to Dec. 1988. Under the supervision of Dr. D.N. Baker. Responsible for the development and maintenance of the cotton simulation model GOSSYM.

1983-1986 Seed Production Specialist.

USAID and Chemonics International Consulting Division, Washington, D.C. April 1983 to Sept. 1986. Responsibilities involved advising farmers in the production of cotton, soybeans and wheat seed.

SELECTED PUBLICATIONS:

1. A. Chang, J. Anciso, C. Avila, J. Enciso, J. Landivar, M. Maeda, J. Jung, J. Yeom. 2021. Unmanned Aircraft System (UAS) Based High Throughput Phenotyping (HTP) for Tomato Yield Estimation. Journal of Sensors, 2021 (in press)

2. A. Chang, J. Yeom, J. Jung, J. Landivar, "Comparison of canopy shape and vegetation indices of citrus trees derived from UAV multispectral images for characterization of citrus greening disease", *Remote Sensing*, 12(24), 2020.
3. J. Jung, M. Maeda, A. Chang, M. Bhandari, A. Ashapure, J. Landivar, "The potential of remote sensing and artificial intelligence as tools to improve the resilience of agriculture production systems", *Current Opinion in Biotechnology*, vol. 70, pp. 15-22, 2020.
4. A. Ashapure, J. Jung, A. Chang, S. Oh, J. Yeom, M. Maeda, A. Maeda, N. Dube, J. Landivar, S. Hague, W. Smith, "Developing a machine learning based cotton yield estimation framework using multi-temporal UAS data", *ISPRS Journal of Photogrammetry and Remote Sensing*, vol. 169, pp. 180-194, 2020.
5. S. Oh, A. Chang, A. Ashapure, J. Jung, N. Dube, M. Maeda, D. Gonzalez, J. Landivar, "Plant Counting of Cotton from UAS Imagery Using Deep Learning-Based Object Detection Framework", *Remote Sensing*, 12(18):2981, DOI: 10.3390/rs12182981, 2020.
6. G. Galli, D. Horne, S. Collins, J. Jung, A. Chang, R. Fritsche-Neto, W. Rooney, "Optimization of UAS-based high-throughput phenotyping to estimate plant health and grain yield in sorghum", *The Plant Phenome Journal*, DOI: 10.1002/ppj2.20010, 2020.
7. M. Bhandari, A. Ibrahim, Q. Xue, J. Jung, A. Chang, J. Rudd, M. Maeda, N. Rajan, H. Neely, J. Landivar, "Assessing winter wheat foliage disease severity using aerial imagery acquired from small Unmanned Aerial Vehicle (UAV)", *Computers and Electronics in Agriculture*, 176:105665, DOI: 10.1016/j.compag.2020.105665, 2020.
8. A. Chang, J. Jung, M. Maeda, J. Landivar, H. Carvalho, J. Yeom, "Measurement of Cotton Canopy Temperature Using Radiometric Thermal Sensor Mounted on the Unmanned Aerial Vehicle (UAV)", *Journal of Sensors*, 2020:1-7, DOI: 10.1155/2020/8899325, 2020.
9. A. Ashapure, J. Jung, A. Chang, S. Oh, M. Maeda, J. Landivar, "A comparative study of RGB and multispectral sensor based cotton canopy cover modelling using multi-temporal UAS Data," *Remote Sensing*, 11(23):2757, DOI: 10.3390/rs11232757, 2019.
10. Yeom, J., J. Jung, A. Chang, A. Ashapure, M. Maeda, A. Maeda, **J. Landivar**. 2019. Comparison of Vegetation Indices Derived from UAV Data for Differentiation of Tillage Effects in Agriculture. *Remote Sensing*, 11(13).
11. Ashapure, A., J. Jung, J. Yeom, A. Chang, M. Maeda, **J. Landivar**. 2019. A Novel Framework to Detect Conventional tillage and No-tillage Cropping System Effect on Cotton Growth and Development Using Multi-temporal UAS Data. *ISPRS Journal of Photogrammetry and Remote Sensing*, 152, 49-64
12. Enciso, J., C. Avila, J. Jung, S. Elsayed-Farag, A. Chang, J. Yeom, **J. Landivar**, M. Maeda, J. Chavez. 2019. Validation of agronomic UAV and field measurements for tomato varieties. *Computers and Electronics in Agriculture*, 158, 278-283.
13. Jung, J., M. Maeda, A. Chang, **J. A. Landivar**, J. Yeom, J. McGinty. "Unmanned Aerial System assisted framework for the selection of high yielding cotton genotypes," *Computers and Electronics in Agriculture*, 152, pp. 74-82, 2018
14. Yeom, J., J. Jung, A. Chang, M. Maeda, **J.A. Landivar**. "Automated Open Cotton Boll Detection for Yield Estimation Using Unmanned Aircraft Vehicle (UAV) Data," *Remote Sensing*. 2018. 10(12), 1895. doi:10.3390/rs10121895
15. Yang, Y., L.T. Wilson, J. Jifon, **J.A. Landivar**, J. da Silva, M.M. Maeda, J. Wang, E. Christensen, 2018. Energy cane growth dynamics and potential early harvest penalties along the Texas Gulf Coast. *Biomass and Bioenergy* 113, 1-14.
16. Chen, R., T. Chu, **J.A. Landivar**, C. Yang and M.M. Maeda. 2017. Monitoring cotton (*Gossypium hirsutum* L.) germination using ultrahigh-resolution UAS images. *Precis Agric*: 1-17.
17. Enciso, J., M. Maeda, **J. A. Landivar**, J. Jung, A. Chang. 2017. A ground-based platform for high throughput phenotyping. *Computers and Electronics in Agriculture*: 141: 286-291.

18. Chang, A., J. Jung, M.M. Maeda, and **J. A. Landivar**. 2017. Crop height monitoring with digital imagery from Unmanned Aerial System (UAS). *Computers and Electronics in Agric.* 141: 232-237.
19. Tianxing Chu, Ruizhi Chen, **Juan A. Landivar**, Murilo Maeda, Chenghai Yang, Michael Starek. 2016. Cotton growth modeling and assessment using unmanned aircraft system visual-band imagery. *Journal of Applied Remote Sensing*. 10(3). <http://dx.doi.org/10.1117/1.JRS.10.036018>
20. Yang, C., G.N. Odvody, C.J. Fernandez, **J. A. Landivar**, R.R. Minzenmayer, R. L. Nichols. 2014. Monitoring cotton root rot progression within a growing season using airborne multispectral imagery. *Journal of Cotton Science*. 18(1):85-93.
21. **Landivar, J.A.**, K. Raja Reddy and Harry F. Hodges 2010. Physiological Simulation of Cotton Growth and Yield. Chapter 28. In *Physiology of Cotton*. J. Steward, D. Oosterhuis, J. Heithold and J. Mauney (eds.). Pp. 318-331. Springer, New York.
22. **Landivar, J.A.** 1993. PMAP. A Plant Map Analysis Program for Cotton. Texas Agricultural Experiment Station. MP 1740. Texas Agricultural Experiment Station. College Station, TX.
23. Baker, D. N. and **J. A. Landivar**, 1991. The Simulation of Plant Development in GOSSYM, Chapter 14. _In *Predicting Crop Phenology*, Tom Hodges (ed). CRC Press, Boca Raton, FL. 233 Pages.
24. **Landivar, J.A.**, D.N. Baker and J.N. Jenkins. 1983. Application of GOSSYM to Genetic Feasibility Studies. II. Analysis of Increasing Photosynthesis, Specific Leaf Weight, and Longevity of Leaves in Cotton. *Crop Sci.* 23:504-510.
25. **Landivar, J.A.**, D.N. Baker and J.N. Jenkins. 1983. Applications of GOSSYM to Genetic Feasibility Studies. I. Analysis of Fruit Abscission and Yield in Okra-Leaf Cottons. *Crop Sci.* 23:487-50