

Crop Production Systems Research Unit
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2021 Publications

1. Fletcher, R.S. and D.K. Fisher. 2021. Testing an open-source multi brand sensor node to monitor variability of environmental conditions inside a greenhouse. *Agricultural Sciences*. 12:159-180. [PDF](#)
2. Fisher, D.K., R.S. Fletcher, and S.S. Anapalli. 2021. Python software integrates with microcontrollers and electric hardware to ease development for open-source research and scientific applications. *Advances in the Internet of Things*. 11(1):42-58. [PDF](#)
3. Hoagland, R.E. and C.D. Boyette. 2021. Effects of the fungal bioherbicide, *Alternaria cassia* on peroxidase pectinolytic and proteolytic activities in sicklepod seedlings. *Journal of Fungi*. 7(12): 1032. 9pgs. [PDF](#)
4. Hoagland, R.E., K. Hirase, and C.D. Boyette. 2021. Interactions and effects on cysteine synthase activity of aminoxyacetate and boc-aminoxyacetate on the bioherbicides *Colletotrichum truncatum* and *Alternaria cassia* and their weed hosts. *American Journal of Plant Sciences*. 12:759-770. [PDF](#)
5. Boyette, C.D., R.E. Hoagland, LR. Higgenbotham, H.L. Walker, J.A. Young and K.C. Stetina. 2021. Host range and virulence of a fungal pathogen for control of giant Salvinia (*Salvinia molesta*). *American Journal of Plant Sciences*. 12(4):444-454. [PDF](#)
6. Huang, Y. and D.K. Fisher. 2021. An open-sourced web application for aerial applicators to avoid spray drift caused by temperature inversion. *Applied Engineering in Agriculture*. 37(1): 77-87. [PDF](#)
7. Huang, Y., W. Ma, and D.K. Fisher. 2021. Development and evaluation of an optical sensing system for detection of herbicide spray droplets. *Advances in the Internet of Things*. 11:1-9. [PDF](#)
8. Huang, Y and Q. Zhang. 2021. *Agricultural Cybernetics*. Springer Nature. 255 pgs: <https://doi.org/10.1007/978-3-030-72102-2> [PDF](#)
9. Zhang, T., Y. Huang, K.N. Reddy, P. Yang, X. Zhao, and J. Zhang. 2021. Using machine learning and hyperspectral images to assess damages to corn plant caused by glyphosate and to evaluate recoverability. *Agronomy*. 11-583 17pgs. [PDF](#)
10. Yang, X., Y. Zhao, G.M. Street, Y. Huang, S.D. Filip To, and J.L. Purswell. 2021. Classification of broiler behaviours using triaxial accelerometer and machine learning. *Animal*. 15(7):100269 11pgs. [PDF](#)
11. Huang, X., M. Reba, A. Coffin, B.R.K. Runkle, Y. Huang, B. Chapman, B. Ziniti, S. Skakun, S. Kraatz, P. Siqueira, and N. Torbick. 2021. Cropland mapping with L-band UAVSAR and development of NISAR products. *Remote Sensing of Environment*. 253-5-112180 14pgs. [PDF](#)

12. Wan, L., H. Cena, J. Zhang, Y. Xu, Y. Huang, X. Li, L. Zhai, H. Xu, D. Sun, W. Zhou. 2021. PROSDM: Applicability of PROSPECT model coupled with spectral derivatives and similarity metrics to retrieve leaf biochemical traits from bidirectional reflectance. *Remote Sensing of Environment*. 267. 18pgs. <https://doi.org/10.1016/j.rse.2021.112761>. [PDF](#)
13. Yu, W., Zhu, J. Wei, S. Jia, A. Wang, Y. Huang, and Y. Zhao. 2021. Estimation of ecological water supplement for typical bird protection in the Yellow River Delta wetland. *Ecological Indicators*. 127-107783 14pgs. [PDF](#)
14. Kharel, T.P., A.J. Ashworth, P.R. Owens, D. Philipp, A.L. Thomas, and T.J. Sauer. 2021. Teasing apart silvopasture system components using machine learning for optimization. *Soil Systems*. 5(41). 16pgs. [PDF](#)
15. Ashworth, A.J., T. Adams, T.P. Kharel, D. Philipp, P.R. Owens, and T.J. Sauer. 2021. Root decomposition in silvopastures is influenced by grazing, fertility, and grass species. *Agrosystems, Geosciences & Environment*. 4(3): Article e20190 15pgs. [PDF](#)
16. Joshi, D.R., R. Ghimire, T.P. Kharel, U. Mishra, S.A. Clay. 2021. Conservation agriculture for food security and climate resilience in Nepal. *Agronomy Journal*. 113: 4484-4493. [PDF](#)
17. Cho, J.B., J. Guinness, T. Kharel, A. Maresma, K.J. Czymmek, J. vanAardt, and Q.M. Ketterings. 2021. Proposed method for statistical analysis of on-farm single strip treatment trials. *Agronomy*. 11, 2042. 16pgs. doi: <https://doi.org/10.3390/agronomy11102042>. [PDF](#)
18. Saski, C., and W. Molin. 2021. The role of extra chromosomal circular DNA in rapid adaption to glyphosate resistance in pigweed. *Research Outreach*. 120:30-33. [PDF](#)
19. Mubvumba, P., P.B. Delaune, and F.M. Hons. 2021. Soil water dynamics under a warm-season cover crop mixture in continuous wheat. *Soil & Tillage Research*. 206-104823 8pgs. [PDF](#)
20. Anapalli, S.S., D.K. Fisher, S.R. Pinnamaneni, and K.N. Reddy. 2021. Vulnerabilities of irrigated and rainfed corn to climate change in a humid climate. *Climatic Change*. 164(5): 18pgs. [PDF](#)
21. Anapalli, S.S., J.L. Krutz, S.R. Pinnamaneni, K.N. Reddy, and D.K. Fisher. 2021. Eddy covariance quantification of soybean (*Glycine max* L.) crop coefficients in a farmer's field in a humid climate. *Irrigation Science*. <https://doi.org/10.1007/s00271-021-00742-2> 19pgs. [PDF](#)
22. Pinnamaneni, S.R., S.S. Anapalli, D.K. Fisher, and K.N. Reddy. 2021. Water use efficiencies of different maturity group soybean cultivars in the humid Mississippi Delta. *Water*. 13-1496 14pgs. [PDF](#)
23. Pinnamaneni, S.R., S.S. Anapalli, N. Bellaloui, and K.N. Reddy. 2021. Effects of irrigation and planting geometry on soybean (*Glycine max* L.) seed nutrition in humid climates. *International Journal of Agronomy*. 2021-6625959 9pgs. [PDF](#)
24. Pinnamaneni, S.R., S.S. Anapalli, R. Sui., N. Bellaloui, and K.N. Reddy. 2021. Effects of irrigation and planting geometry on cotton (*Gossypium hirsutum* L.) fiber quality and seed composition. *Journal of Cotton Research*. 4(2): 11pgs. [PDF](#)
25. Tyler, H.L. 2021. Shifts in bacterial community in response to conservation management practices within a soybean production system. *Biology and Fertility of Soils*. 57:575–586. [PDF](#)
26. Tyler, H.L. 2021. Single-versus double-species cover crop effects on soil health and yield in Mississippi soybean fields. *Agronomy*. 11, 2334. 15pgs. [PDF](#)