MURALI K. DARAPUNENI

Associate Professor- Semi-Arid Cropping Systems
Department of Plant and Environmental Science
Agricultural Experiment Station and Science Center
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EDUCATION

Texas A&M University, College Station, TX., USA..... August, 2012
Doctor of Philosophy or Ph.D. (Agronomy)

West Texas A&M University, Canyon, TX., USA..... May, 2008
Master of Science (Plant, Soil, and Environmental Science)

Acharya N. G. Ranga Agricultural University, Hyderabad, Andhra Pradesh, India..... August, 2005
Bachelor of Science (Horticulture)

WORK EXPERIENCE

New Mexico State University, ASC-Tucumcari, NM., USA.....July 2020-Current
Associate Professor of Semi-Arid Cropping Systems

New Mexico State University, ASC-Tucumcari, NM., USA.....July 2014-June 2020
Assistant Professor of Semi-Arid Cropping Systems

West Texas A&M University, Canyon, Texas……2016-Current
Adjunct Faculty Member

University of Nebraska, PHREC, Scottsbluff, NE., USA..... January 2013- July 2014
Post-Doctoral Researcher

Texas A&M University, College Station, TX., USA..... May 2008- August 2012
Graduate Research Assistant

West Texas A&M University, Canyon, TX., USA..... January 2006- May 2008
Graduate Research Assistant

RESEARCH INTERESTS

Systems approach with an emphasis on efficient water saving strategies and sustainable crop production while maintaining the environmental quality in the semi-arid environments. Scope and applications of my research include modifying the existing cropping systems by introducing cover crops, leguminous, and biofuel crops to investigate the effects on water use efficiency, nutrient recycling, residue management, and soil quality.

SIGNIFICANT PROFESSIONAL ACHIEVEMENTS

- **Authored and coauthored more than 50 peer reviewed publications.**
- **Proposed multi-million dollar grant proposals with reasonable success rate.**
- **Advised 7 graduate students at MS and Ph.D. levels in the Department of Plant and Environmental Science, New Mexico State University.**
- **Presented at several national and international scientific meetings.**
- **Associate Editor: *Agronomy Journal and Crop, Forage, and Turfgrass Mangement Journal.***
- **Expert reviewer for NIFA-SBIR grant and USAID grants, and editorial board member and reviewer of *Agronomy Journal, Field Crops Research, Crop, Forage, and Turf grass Journal, and Vadose Zone Journal.***
- **Adjunct faculty: West Texas A&M University, Canyon, TX.**

PEER REVIEWED PUBLICATIONS (LAST 5 YEARS)

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1. **Darapuneni, M. K**., Lauriault, L. M., Martinez, G., Idowu, O. J., Djaman, K. (2022). Yield potential and water use efficiency of alternate rotation crops in the semiarid environment of southwestern USA. ASABE Applied Engineering in Agriculture, 38 (6): 845-851.

2. Umesh, M. R., Angadi, S., Begna, S., Gowda, P. H., Hagevoort, G. R., Lauriault, L. M., **Darapuneni, M. K**. Intercropping and species interactions on physiological and light use characteristics of forage cereals-legumes combinations in semi-arid regions. Field Crops Research, 290, 108755.

3. Lauriault, L. M., Pietrasiak, N., **Darapuneni, M. K**., Dominguez, A., Martinez, G. K. (2022). Comparison of surface water or treated municipal wastewater irrigation on alfalfa establishment, soil fertility, and soil microbial conditions. Soil Systems, 6(67), 1-15.

4. Djaman, K., **Darapuneni, M. K**., Irmak, S. (2022). Soil Water Dynamics, Effective Rooting Zone, and Crop Evapotranspiration of Sprinkler Irrigated Potato in a Sandy Loam Soil. Agronomy, 12(4), 20.

5. Creegan, E., Flynn, R. P., Torell, G., Brewer, C. E., VanLeeuwen, D., Acharya, R., Heerema, R., **Darapuneni, M. K.** (2022). Pecan (Carya illinoinensis) and dairy waste stream utilization: properties and economics of on-farm windrow systems. Sustainability, 14(5), 2550.

6. Djaman, K., Allen, S., Djaman, D., Koudahe, K., Irmak, S., Puppala, N., **Darapuneni, M. K**., Angadi, S. (2022). Planting date and plant density effects on maize growth, yield, and water use efficiency. Environmental Challenges, 6, 100417.

7. Pratt, R. C., Velasco-Cruz, C., Darapuneni, M. K., Montgomery, R., Grant, L. (2022). Southwest-adapted maize germplasm as potential genetic resource for selection of salinity tolerant cultivars. Crop Science, 62, 286-300.

8. Darapuneni, M. K., Idowu, O. J., Sarihan, B., Dubois, D. W., Grover, K., Sanogo, S., Djaman, K., Lauriault, L. M. (2021). Growth characteristics of summer cover crop grasses and their relation to soil aggregate stability and wind erosion control in arid Southwest. ASABE Applied Engineering in Agriculture, 37(1), 11-23.

9. Darapuneni, M. K. (2021). Strategies to improve crop productivity of semi-arid cropping systems for food and energy security. Archives of Agriculture Research and Technology, 2(1), 1-2.

10. Lauriault, L. M., Darapuneni, M. K. (2021). Alfalfa rotation strategy and soil type influence soil characteristics and replanted alfalfa yield in the irrigated semiarid, subtropical southwestern USA. MDPI Crops, 1, 141-152.

11. Djaman, K., O'Neill, M. K., Lauriault, L. M., Marsalis, M. A., Koudahe, K., Darapuneni, M. K. (2021). The dynamics of forage yield of different fall dormancy rating alfalfa cultivars in a semiarid climate. Agricultural Research, 10(1), 378-389.

12. Paye, W., Begna, S., Ghimire, R., Angadi, S., Singh, P., Umesh, M.R, Darapuneni, M. K. (2021). Winter canola yield and nitrogen use efficiency in a semiarid irrigated condition. Agronomy Journal. 113(2): 2053-2067.

13. Djaman, K., Koudahe, K., Darapuneni, M. K., Irmak, S. (2021). Chilling and heat accumulation by fruit and nut trees and flower bud vulnerability to early spring low temperatures in New Mexico: meteorological modeling approach. Sustainability, MDPI, 13(5), 2524.

14. Darapuneni, M. K., Lauriault, L. M., VanLeeuwen, D. M., Angadi, S. V. (2020). Irrigation strategies influenced alfalfa dry matter yield and water productivity in a semiarid subtropical environment. Irrigation and Drainage, 69(5), 1063-1071.

15. Darapuneni, M. K., Hergert, G. W., Bradshaw, J. D., Wilson, R., Aqeel, A., Harveson, R., Nielsen, R., Lauriault, L. M. (2020). Agronomic utilization of precipitated calcium carbonate- effect of PCC on sugar beet root aphid control and herbicide dose response of Kochia grown on PCC piles. Agronomy, 10(537), 11.

16. Idowu, O. J., Sultana*, S., Darapuneni, M. K., Beck, L. L., Steiner, R. L., M. (2020). Tillage effects on cotton performance and soil quality in an irrigated arid cropping systems. Agriculture, 10 (11)(531), 1-14.

17. Crookston, B*., Blaser, B., Darapuneni, M. K., Rhoades, M. (2020). Pearl millet forage water use efficiency. Agronomy, 10(11)(1672), 1-18.

18. Djaman, K., Darapuneni, M. K., O'Neill, M. K. (2020). Relationship between Relative Maturity and Grain Yield of Maize (Zea mays L.) Hybrids in Northwest New Mexico for the 2003–2019 Period. Agriculture, 10(9), 290.

19. Marsalis, M. A., Lauriault, L. M., Darapuneni, M. K. (2020). Perennial cereal rye performance and comparisons with winter annual cereal forages in the semiarid, subtropical southwestern United States. Crop Science, 60, 507-514.

20. Acharya, B. S*., S. Dodla, S. Sepat, H. Bohara*, L. Gaston, J. Wang, and M.K. Darapuneni. Winter cover crops effect on soil moisture and soybean growth and yield under different tillage systems. Soil Tillage Research, 195, 104430.

21. Himanshu, S.K., S. Ale, J. Bordovsky, and M.K. Darapuneni. 2019. Evaluation of crop growth stage-based deficit irrigation strategies for cotton production in the Southern Great Plains. Agric. Water Management, 225, 105782.

22. Darapuneni, M.K., L.M. Lauriault, and S. Angadi. 2019. Alfalfa termination strategies determine subsequent wheat and haygrazer forage yield and nutritive value. Crop Forage Turfgrass Management, 5(1),190034.

23. Darapuneni, M.K., L.M. Lauriault, S. Dodla, O.J. Idowu, K. Grover, G. Martinez, K. Djaman, and S. Angadi. 2019. Temporal variations in plant and soil characteristics following a single strip-till manure application. Soil Tillage Research, 194, 104350, 1-9.

24. Machicek, J*., B. Blaser, M.K. Darapuneni, B. Crookston*, and M. Rhodes. 2019. Harvesting regimes affect brown midrib sorghum and brown midrib pearl millet production and quality. Agronomy, 9(8), 416, 1-13.

25. Idowu, O.J., S.Sultana*, M.K. Darapuneni, L. Beck, and R. Steiner (2019). Short-term conservation tillage effects on corn silage yield and soil quality in an irrigated, arid agroecosystem. Agronomy, 9(8), 455: 1-17.

26. Djaman, K., K. Komlan, and M.K. Darapuneni. 2019. Preplant irrigation effectiveness and crop yield and water productivity in the southwest United States. Journal of Agriculture and Horticulture Research, 2(2), 1-6.

27. Dattamudi, S*., J.J. Wang, S. Dodla, H.P. Viator, R. DeLaune, A. Hiscox, M.K. Darapuneni, C. Jeong, and P. Colyer. 2019. Greenhouse gas emissions as influenced by nitrogen fertilization and harvest residue management in sugarcane production. Agrosystems. Geoscience and Environment. 2(1):190014.

28. Darapuneni, M. K., O.J. Idowu, L.M. Lauriault, S. Dodla, K. Pavuluri, S. Ale, K. Grover, and S. Angadi. 2019. Tillage and nitrogen rate effects on corn production and residual soil characteristics. Agronomy Journal, 11(3), 1524-1532.

29. Bohara, H*., S. Dodla, J.J. Wang, M.K. Darapuneni, B.S. Acharya*, S. Magdi, K. Pavuluri. 2019. Influence of poultry litter and biochar on soil water dynamics and nutrient leaching from a very fine sandy loam soil. Soil Tillage Research, 189, 44-51.

30. Zhang, J., G. Martinez, M.K. Darapuneni, A. Abdelraheem, J. McCarty, J. Jenkins. 2018. Evaluation of a multi-parent advanced generation inter-cross (MAGIC) introgressed line population for Verticillium wilt resistance in Upland cotton. Euphytica, 214 (10), 1-8.

31. Bohara, H., S. Dodla, J.J. Wang, M.K. Darapuneni, M. Kongchum, D.D. Fromme, and D. Harrell. 2018. Impacts of N-stabilizers and biochar on nitrogen losses, nitrogen phytoavailability, and cotton yield in poultry litter-fertilized soils. Agronomy Journal, 110, 2016-2024.

32. Hergert, G.W., R.A. Nielsen, J.A. Schild, R.L. Hawley, and M.K. Darapuneni. 2018. Row-applied iron chelate for correcting iron deficiency chlorosis in dry bean. Agronomy Journal, 111, 1-6.

33. Darapuneni, M.K., S. Angadi, M.R. Umesh, F.E. Contreras-Govea, K.S. Annadurai, K., S.H. Begna, M.A. Marsalis, N.A. Cole, P.H. Gowda, G.R. Hagevoort, and L.M. Lauriault. 2018. Canopy development of annual legumes and forage sorghum intercrops and its relation to dry matter accumulation. Agronomy Journal, 110, 1–11.

34. Mello, S.C., D.D. Neto, M.K. Darapuneni, and K. Pavuluri. 2018. Response of tomato to polyhalite as multi nutrient fertilizer in south-east Brazil. Journal of Plant Nutrition, 41(16), 2126-2140.

35. Wen, Y., M.K. Darapuneni, D. Chen, G. Piccinni, T. Cothren, D. Leskovar, K. Pavuluri, D. Rowland. 2018. The phenotypical responses of cotton and their relation to lint yield under traditional and regulated deficit irrigation schemes in semi-arid environments. Agronomy Journal, 110, 1339-1353.

CERTIFICATIONS

- **SAS® Certified Base Programmer®9**
- **SAS® Certified Advanced Programmer®9**