FacultyProfile

PersonalDetails

Name	Dr Kailas Kamaji Dakhore	
Designation	Agrometeorologist	
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AcademicQualifications

Degree	Specialization	University	Yearof Passing
B.Sc (Agri.)	Agriculture	Marathwada Agricultural University, Parbhani (MS)	2001
M.Sc	Agricultural Meteorology	Indira Gandhi Agricultural University, Raipur (CG)	2003
Ph.D	Agricultural Meteorology	Anand Agricultural University, Anand (Guj)	2007
Additional Qualification (if any):Additional Degree/Diploma/NET/SET			
PGDAIT	Information and Technology	Anand Agricultural University, Anand (Guj)	2009
Postdoc	Satellite Meteorology	ITC, University of Twente, The Netherlands	2010
Visiting Scientist	Satellite Meteorology	Agricultural Biological Engineering, University of Florida, Florida	2022

Professional Experience

Stream	Years	Stream	Years
Teaching	12	Research	21
Extension	19	Administration	13

Area of Research/Interest
Micrometeorology, Satellite Meteorology, Crop Modeling & Climate Change *etc.*

ResearchGuidance

Degree	No.ofStudent &Guided
M.Sc./M.Tech	15
Ph.D.	

Research Accomplishments (Recent Ten Most Important Publications)

Sr.No	Title	Journal	ISSN/ISBN	NAAS Rating
01	Long-Term Spatiotemporal Investigation of Various Rainfall Intensities over Central India Using EO Datasets	Hydrology	0022-1694	12.40
02	Simulating potential impacts of future climate change on post-rainy season sorghum yields in India	Sustainability	2071-1050	9.90
03	Machine learning model ensemble for predicting sugarcane yield through synergy of optical and SAR remote sensing	Remote Sensing Applications: Society and Environment	2352-9385	9.48
04	Field-scale assessment of sugarcane for mill-level production forecasting using Indian satellite data	Journal of the Indian Society of Remote Sensing	0255-660X	8.50
05	Application of CERES-sorghum crop simulation model DSSAT v4. 7 for determining crop water stress in crop phenological stages.	Modeling earth systems and environment	2363-6203	7.36
06	Algorithms for Weather Based Management Decisions in Major Rainfed Crops of India: Validation Using Data from Multi-location Field Experiments	Agronomy Journal	2073-4395	7.68
07	Prediction of Kharif cotton yield over Parbhani, Maharashtra: Combination of extended range forecast and DSSAT-CROPGRO-Cotton model	Mausam	0252-9416	6.60
08	Analysis of Drought in the Maharashtra by Using the Standardized Precipitation Index	J. of Agrometeorology	0972-1665	6.64
09	A case study on economic impact of agro meteorological advisory services in Aurangabad district of Marathwada region	J. of Agrometeorology	0972-1665	6.64
10	Study the Rainfall Variability and Impact Of El Nino Episode On Rainfall and Crop Productivity At Parbhani	Mausam	0252-9416	6.60

Credentials:

Particulars	Numbers	Particulars	Numbers
ResearchArticles	42	PopularArticles	55
Books / Booklets	05	BookChapters	03
Research/Technology Recommendations	05	VarietiesDeveloped	
Patents		Abstracts Published	25
Technical Publication	02		

Significant Achievements(Top Five)

Patent/IP/Technologies/ Varieties/Machineries Developed / Methodologies/ Recommendations	Year
1. Successfully led the introduction of Continuous Rainfall Criteria (CRC) in Maharashtra, utilizing NDVI-based assessments to objectively evaluate crop damage from continuous rainfall for remuneration to farmers in Maharashtra. This initiative involved utilizing NDVI-based assessments to objectively evaluate crop damage caused by continuous rainfall. By ensuring accurate and timely compensation based on scientific data, we supported farmers in mitigating financial losses and building resilience against climate-related risks. Our efforts not only modernized agricultural policies but also contributed to sustainable farming practices and the welfare of rural communities in Maharashtra.	2023
2. During the Kharif season of 2023, Marathwada region experienced a mid adverse drought characterized by a dry spell in August. According to the drought manual of the Government of India, a dry spell of 21 days during the growing period of Kharif crops qualifies an area for mid adverse drought compensation under the Pradhan Mantri FasalBima Yojana (PMFBY) scheme. The analysis conducted to assess the impact of the dry spell and the subsequent issuance of compensation to affected farmers.	2023
3. The crop coefficient (Kc) values provided are essential for estimating the water requirement of soybean crops during different growth stages in the Marathwada region. Here's how these values are typically used: Initial Stage (1-28 days): Kc = 0.64 This stage covers the early growth phase of soybean plants when they are establishing root systems and initial vegetative growth is occurring. Mid Stage (29-84 days): Kc = 1.31 The mid stage represents the period of active vegetative growth and flowering in soybean plants. This is when the crop is utilizing more water to support biomass production and reproductive processes. End Stage (85-110 days): Kc = 0.66 During the end stage, soybean plants are nearing maturity, and there is a reduction in vegetative growth. The crop is focusing more on seed development and filling. **Application in Estimating Crop Water Requirement:** To estimate the crop water requirement (ETc) at any given time during the growing season, the Kc value corresponding to the growth stage is multiplied by the reference evapotranspiration (ETo) for the location.	2023

ETo is typically estimated using weather data and represents the evaporative demand of the atmosphere. ETc = Kc * ETo **Significance for Marathwada:** Marathwada region experiences specific climatic conditions that influence crop water needs. These Kc values are tailored for local conditions, helping farmers and policymakers make informed decisions regarding irrigation scheduling and water management practices. Using these Kc values ensures that soybean crops receive adequate water during critical growth stages, optimizing yield potential while conserving water resources.	
4. The crop coefficient (Kc) values provided are crucial for estimating the water requirements of Bt. cotton crops during various growth stages across Maharashtra. **Here's a breakdown of how these Kc values are typically applied**: Initial Stage (1-30 days): Kc = 0.51 This stage corresponds to the early development phase of Bt. cotton, where the plants are establishing and undergoing initial vegetative growth. Mid Stage (31-111 days): Kc = 1.24 The mid stage covers the period of active vegetative growth and flowering in Bt. cotton. This is when the crop requires the highest amount of water for biomass production and reproductive processes. End Stage (112-164 days): Kc = 0.95 During the end stage, Bt. cotton plants are maturing, and there is a decrease in vegetative growth. Water requirement decreases as the crop transitions to focusing on boll development and maturation. **Application in Estimating Crop Water Requirement:** To calculate the crop water requirement (ETc) at any given time during the growing season, multiply the Kc value corresponding to the growth stage by the reference evapotranspiration (ETo) for the location. ETo represents the evaporative demand of the atmosphere and is typically estimated using weather data. ETc = Kc * ETo **Significance for Maharashtra:** Maharashtra's diverse agro-climatic zones influence Bt. cotton water requirements. These specific Kc values are tailored for the state's conditions, aiding farmers and agricultural authorities in efficient irrigation management and water resource planning. By using these Kc values, stakeholders can optimize water use efficiency, enhance crop productivity, and mitigate risks associated with water stress during critical growth stages of Bt. cotton.	2023
5. If the soil moisture is reduced due to dry spell, the yield of soybean crop is decreases as follows this is recommended for Marathwada region 1. Vegetative stage :- 39.1% 2. Flowering stage :- 55.4%	2023

3. Pod formation stage :- 45.1% 4. Pod development stage :- 23.0% 5. Vegetative stage to Flowering stage :- 62.8% 6. Flowering stage to pod formation stage :- 67.3% 7. Pod formation to pod development stage :- 59.1%	

ExternallyFundedProjects:Implemented/Handled/Assisted

- AICRP on Agrometeorology, VNMKV, Parbhani

Agrometeorologist (2016 to till date)

AICRPAM-NICRA, VNMKV, Parbhani

Principal Investigator (2016 to 2023)

- Gramin Krishi Mausam Sewa (GKMS), VNMKV, Parbhani

Principal Nodal Officer (2016 to till date)

- Crop Yield Forecasting Under FASAL, VNMKV, Parbhani

Principal Investigator (2016 to 2024)

- Crop Weather Observation Scheme, VNMKV, Parbhani

Principal Investigator (2016 to 2023)

- Innovative and Contextual Agromet Advisory Services for Climate Smart Agriculture under Monsoon Mission – II, VNMKV, Parbhani.

- **Principal Investigator (2018 to 2021)**

- Watershed Organization Trust (**WOTR**), VNMKV, Parbhani

Principal Investigator (2017-2018)

- Forecasting sugarcane production at mill command area in Maharashtra using satellite remote sensing and ground base Observation. VNMKV, Parbhani.

Principal Investigator (2017 to 2019)

Microclimate studies on crop and genotype,VNMKV, Parbhani

Principal Investigator (2022 to till date)

Awards/Recognitions (**Top Five**)

1.	**Dr. P. D. MISTRY Gold Medal** Award for **Best Ph.D thesis** by Association of Agrometeorologist for the year 2007-08.
2.	**Dr. S. Venkataraman Young Scientist Award** by Association of Agrometeorologists (AAM) in International Symposium on "Advances In Agrometeorology For Managing Climatic Risks Of Farmers" scheduled on 11th-13th February, 2019 at New Delhi.
3.	**Best AMFU Award** for the year 2018 for **"Outstanding Dissemination and Outreach of Agromet Advisories"** on the Occasion of 13th ARM of "GKMS" during 18-20 Dec. 2019 held at Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (MP).
4.	**Best Innovative Farmer award CRIDA, ICAR, Hyderabad** AICRPAM-NICRA project 39th Foundation day of ICAR-CRIDA Hyderabad on 12 April, 2023.
5.	**Prof. B. V. Ramana Rao Best Paper Award in Agricultural Meteorology"** for the year 2022. National Seminar (AGMET-2022) TNAU, Coimbatore 15-17 Feb 2023