

Dr. B. SAILAJA

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Personal bio-data:

- a) **Position/Designation** : **Principal Scientist**
b) **Joining date in ICAR** : **31-12-1998, (DOB: 01/03/1969)**
c) **Discipline and Specialization** : **Computer Applications in Agriculture and experienced in developing DSS by integrating spatial technologies and crop models**

d) Training/advance exposure in the area of work:

- Participated in 5 days training program on "INM and Nutrient Budgeting through Advanced Models to improve Crop Productivity from October 22-26, 2018, ICAR - Indian Institute of Soil and Water Conservation, Udagamandalam Participated on 4 days Training on developing Rice Extension interface under ICAR-IRRI project, February 9-12, 2017, IRRI, Philippines.
- Participated in the International Training Program on Leadership & Career Development for Women Scientists & Technologists held from September 8-12, 2014, Bangalore.
- Participated in 'The Agricultural Model Intercomparison and Improvement Project (AgMIP) South Asia Regional Workshop' held during February 20-24th, 2012, at ICRISAT, Hyderabad and acted as a member of Oryza translators team.
- Participated "Short Course on Cropping System Models Applications in Land Resource Management" during 5-9th December 2011, ICRISAT, Patancheru, Andhra Pradesh.
- Attended a training program in Web technologies under AGROWEB project organised by CRIDA with faculty from Institute of Electronic Governance, Govt. of AP, Hyderabad from February 16th – March 4th , 2009.

e) Contribution to the scientific advancement:

- Developed Web based Rice experimental database management system for multi-locational rice genotype evaluation under All India Coordinated Rice Improvement Project (AICRIP MIS- www.aicrip-intranet.in).
- Developed Rice Expert systems to diagnose insect pests and diseases(<http://www.ricexpert.in>)

- IIRR Geo-portal was developed (<http://www.iirr-geoportal.in>) for visualising GIS work carried out at IIRR like biotic stresses for three decades using village level survey database and, district wise and agro climatic zone wise rice area and productivity, Geospatial models for identifying suitable areas for Hybrid Rice seed production, System of Rice Intensification(SRI), Soil Quality for Rice Crop etc.
- Spatial Rice Decision support systems (SRDSS) was developed by integrating Soil, weather layers with climate and crop models for efficient rice crop management.
- Models developed for assessing the performance of genotypes towards radiation use efficiency, photothermic indexing and screening for pest resistance.
- Developed DRRSTAT for evaluating breeding lines for yield advantage, plant height, pest, disease, nutrient and different management practices.
- A tri-lingual (Telugu, English and Hindi) mobile App on Rice IPM was launched.
- Mobile based AI module for Rice Pest Identification (Aavishkar app) was launched recently for image based diagnostics.
- Identified innovative methodology to estimate rice area and yield using satellite images and crop models.
- Identified low yielding, high yielding districts by using GIS with different parameter layers like soil, rainfall, irrigation fertilizer use etc.

2. Future Planning of research:

- Managing Rice Experimental Database under AICRIP
- Enabling SRDSS through internet and validating across different ecologies
- Integrating SRDSS with Wireless weather Sensors
- Evaluating climate models and integrating climate, crop models with spatial technologies for estimating future rice production
- Developing spectral indices to identify different varieties and their spread
- To identify abiotic stresses like soils and physiology viz.; different soil types, topography, slope, nutrient deficiencies, water logging, temperature stresses etc.
- To identify different biotic stresses viz.; spread, intensity, endemic areas and epidemics of various insect pests and diseases.

3. Publications:

- **Sailaja,B.**, S. R. Voleti, D. Subrahmanyam , P. Raghuvveer Rao , S. Gayatri , R. Nagarjuna Kumar and Shaik N. Meera. 2019. Spatial rice decision support system for effective rice crop management. Current Science, Vol. 116(3), 412-422.
- **Sailaja, B.**, Shaik N Meera, S. Gayatri, R. Nagarjuna Kumar and V Ravindra Babu. 2016. Dealing with big data in agriculture through Management information system : a case of coordinated rice research. International Journal of Agricultural and Statistical Sciences 12(2). 537-545.
- **Sailaja B.**, Voleti S. R., Subrahmanyam D., Nathawat M.S., Rao N.H.. 2013. Regional Rice Yield Estimation by Integration of Spatial Technologies and Crop model. Journal of Remote Sensing & GIS, Vol 4(2), 56-66.

- **Sailaja B**, SR Voleti, D. Subrahmanyam, MS Nathawat and NH Rao .2012. Validation and Calibration of Oryza2000 Model under Nitrogen and Water limited situation. Indian Journal of Plant Physiology. 18(1): 31-40.
- **Sailaja B**, P Subrahmanyeswara Rao, MS Nathawat and NH.Rao. 2009. A combination method for regional rice area estimation using remote sensing. Asian Journal of Geoinformatics (International Journal). 2(3): 3-10.
- **Sailaja B**, Krishnaveni D, Padma Kumari AP and Mishra B. 2004. Developing Computer Expert for Management of Pathogens and Insect Pests in Rice. Indian Journal of Mycology and Plant pathology, 34 (2): 495-499.
- **Sailaja B** Muralidhran K and Mishra B. 2004. Software for Assessing Reaction of Genotypes to Pathogens in Multi locational Tests. Indian Journal of Mycology and Plant pathology, 34 (2): 417:421.

4. Other relevant activities of Scientist:

- Officer Incharge for Agriculture Knowledge Management Unit and GIS(AKMU-GIS).
- Developing and Managing ICAR-IIRR web site www.icar-iirr.org and other 7 child sites of IIRR on local server.
- Developed statistical analysis packages for RBD, Factorial and Split plot designs and screening genotypes for major pests and diseases and assisting in analysing AICRIP data. Managing Web, Mail, and Proxy and Firewall servers for more than 200 nodal computers.
- Acting as COPI in 3 institutional projects and 1 externally funded project.

5. Awards:

- *India Geospatial Excellence Award 2012* - For my project on “Spatial Decision Support System for Rice Production Management” (**Sailaja B.**, S.R., Voleti, D.Subrahmanyam, P. Raghuv eer Rao and Shaik N Meera), DRR has been conferred with *India Geospatial Excellence Award 2012* under agriculture domain. This award was presented during Geospatial World Forum 2012, Gurgaon, India.
- Women in Distinction Award in the category of Computer Applications of WOMEN Awards- VIWA 2016.
- **GS Sirohi Best Paper Award 2014 for the paper published during 2012: Sailaja B**, SR Voleti, D. Subrahmanyam, MS Nathawat and NH Rao .2012. Validation and Calibration of Oryza2000 Model under Nitrogen and Water limited situation. Indian Journal of Plant Physiology. 18(1): 31-40.
- Received IIRR Best Paper Award for the paper on **Sailaja,B.**, S. R. Voleti, D. Subrahmanyam , P. Raghuv eer Rao , S. Gayatri , R. Nagarjuna Kumar and Shaik N. Meera. 2019. Spatial rice decision support system for effective rice crop management. Current Science, Vol. 116(3), 412-422

6. Copyrights

- SW-12459/2019- AICRIP Experimental Database(<http://www.aicrip-intranet.in>)