

Conduction of One-day Workshop on "Biofortification: Plant Breeding for Nutritional Security." for the Faculty members of KLEF Vaddeswaram Campus - Communication - Reg.

From Registrar < registrar@kluniversity.in>

Date Thu 2024-09-26 12:35 PM

PRESIDENT president@kluniversity.in>; Raja Harin koneru krh@kluniversity.in>; PRO-CHANCITIOR
prochancellor@kluniversity.in>; Vice Chancellor * KLU <vc@kluniversity.in>; Dr.G.P.S. Varma, Vice Chancellor * gpsvarma@kluniversity.in>; N Venkat Ram < venkatram@kluniversity.in>; Pro VC
provc@kluniversity.in> Pro VC Academics provc@kluniversity.in>

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COLLECTION AGRICULTURE faculty List 28, 09-2074 xlsx

Ref: KLEF/RO/ASC/Workshop/2024-25

26th September 2024

Orders of the Hon'ble Vice-Chancellor dt. 26-09-2024 CIRCULAR

Sub: Conduction of One-day Workshop on "Biofortification: Plant Breeding for Nutritional Security." for the Faculty members of KLEF Vaddeswaram Campus

Communication - Reg.

Rei: Letter received from Dr. I. Govardhini, Principal, Academic Staff College.

This is to inform the KL College of Agriculture, KLEF, Vaddeswaram, in association with the Academic Staff College KLEF, will be organizing a **One-day Workshop on "Biofortification: Plant** Breeding for **Nutritional Security."** for the Faculty members of KLEF, Vaddeswaram Campus on 28-09-2024 (Saturday).

Program Details:

Date

28-09-2024(Saturday).

Timings

From 10:00 AM to 1:00 PM

Venue

Sunflower Hall, C-Block, Ground floor, KLEF, Vaddeswaram campus.

Resource person:

Sri MOHAN SATYAKAR RAO NALABOLU, Junior Breeder – Rice (R&D-FC & Cotton), JK Agri Genetics

It is mandatory that the earmarked Teaching Faculty members (as per the list enclosed) to attend the Workshop.

All the Deans, Principals, HoDs and Functionaries concerned of KLEF-Vaddeswaram Campus are directed to ensure participation of earmarked Faculty members accordingly.

REGISTRAR

Incl as above

Mail & Hard copy to: Hon'ble President, KLEF

Mail to: Hon'ble Vice-Presidents, KLEF

Mail & Hard copy to: Hon'ble Pro Chancellor Mail & Hard copy to: Hon'ble Vice-Chancellor Mail & <u>Hard copy</u> to: Pro Vice-Chancellors

Mail to: Chief Coordinating Officer-Dr.A. Jagadeesh

Mail to: Special Officer - Dr. A. Vani

Mail to: All Advisors / All Deans / All Principals / All Vice Principals / All Sr.Directors / All Directors / All Additional Deans

Mail to: Controller of Examinations-Dr.A.S.C.S.Sastry

) Mail to: Joint Registrar / Deputy Registrar / Sr.Manager (Alumni Relations) & AR-Sri Λ.Krishna Rao / AR Dr MVAL Narasimha Rao

Mail to: All HoDs / All Alternate HoDs / All Deputy HoDs

Mail to: KL H - Principal Off Campus Centre, Aziz Nagar Campus / KL H - Principal Off Campus Centra, Bowrampet

Vice-Principal / Director / Deputy Director

Mail to: Chief Technical Officer (CTO)-Mr.A.Satya Kalyan

Mr. Raja Sekhar, Emp. No. 2482, Jr. Network Administrator (femails rajasekhar_syte@kluniversity.in)

Mail to: Professor In-charge, EduTech, Animation-Dr. M. Siva Kumar, Assoc. Professor, ECI

Mail to: Principal Academic Staff College

Director, KL College of Agriculture & HoD-KL College of Agriculture

Individuals concerned

Thanks & Regards









ONE-DAY WORKSHOP ON "BIOFORTIFICATION: PLANT BREEDING FOR **NUTRITIONAL SECURITY."**

28 SEPTEMBER 2024

SUNFLOWER HALL, C-BLOCK, GROUND FLOOR, **KLEF, VADDESWARAM CAMPUS.**

RESOURCE PERSONS:

SRI MOHAN SATYAKAR RAO NALABOLU

Junior Breeder - Rice (R&D-FC & Cott on), JK Agri Geneti cs Ltd.



Academic Staff College



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Report on

One-day Workshop on "Biofortification: Plant Breeding for Nutritional Security."

Program Details:

Date: 28-09-2024(Saturday).

Timings: From 10:00 AM to 1:00 PM

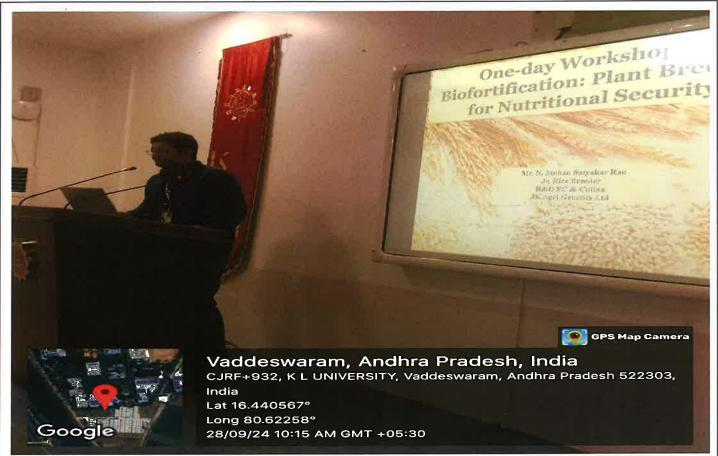
Venue: Sunflower Hall, C-Block, Ground floor, KLEF, Vaddeswaram campus.

Resource person:

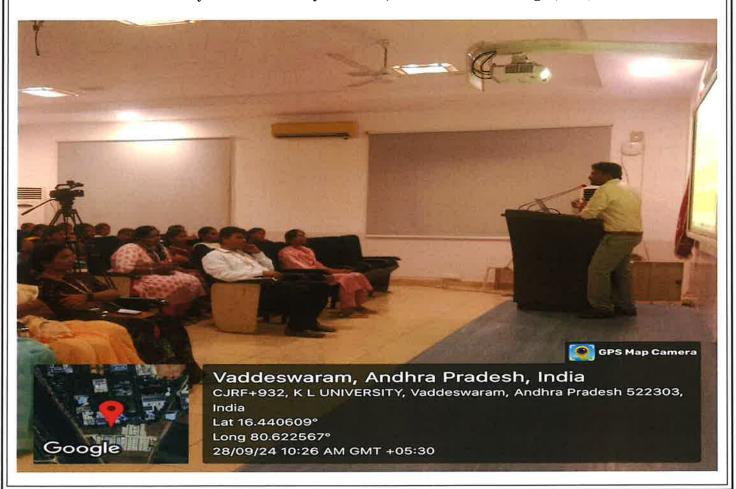
Sri MOHAN SATYAKAR RAO NALABOLU, Junior Breeder – Rice (R&D-FC & Cotton), JK Agri Genetics Ltd.

The Academic Staff College at KLEF conducted a One-day Workshop on "Biofortification: Plant Breeding for Nutritional Security." for teaching faculty on 28th November 2024. This session main aim of **biofortification** in the context of plant breeding for nutritional security is to improve the nutritional quality of crops through the process of selective breeding or genetic modification.

The goal is to enhance the levels of essential vitamins, minerals, and other nutrients in staple crops, such as rice, wheat, maize, and beans, which are commonly consumed by large populations, especially in developing countries.



Welcome address by Mr. Arun Reddy Asst Prof, Academic Staff College (ASC)



Resource person: Sri MOHAN SATYAKAR RAO NALABOLU, Junior Breeder – Rice (R&D-FC & Cotton), JK Agri Genetics Ltd.

The one-day workshop on "Biofortification: Plant Breeding for Nutritional Security" was held to address the growing global concern of micronutrient deficiencies and malnutrition. This workshop brought together leading experts, researchers, practitioners, and stakeholders to explore biofortification through plant breeding as a sustainable and innovative approach to improve the nutritional quality of staple crops. Sri Mohan Satyakar Rao Nalabolu, Junior Breeder – Rice (R&D-FC & Cotton), JK Agri Genetics Ltd., played an integral role in sharing his insights and expertise on how plant breeding, particularly in rice and cotton, can contribute to the biofortification movement.

Purpose of the Workshop:

The purpose of the workshop was to:

- **Highlight the Role of Biofortification**: To raise awareness about the importance of biofortification in combating nutritional deficiencies, particularly in developing countries.
- Share Knowledge and Experience: To provide a platform for experts to discuss the latest advancements in plant breeding technologies and their applications in biofortification.
- Address Challenges: To identify the key challenges in implementing biofortification at a large scale and propose potential solutions.
- Encourage Collaboration: To foster collaboration between academic institutions, private sector companies, and policymakers to advance biofortification efforts globally.

Key Sessions and Insights:

- 1. Inaugural Address and Overview of Biofortification:
 - > The workshop opened with an introductory address on the importance of biofortification. Experts emphasized that addressing micronutrient deficiencies through biofortified crops could play a pivotal role in improving public health, especially in countries with limited access to diverse diets.
- 2. Scientific Principles of Biofortification:
 - A detailed session on the scientific principles of biofortification covered the mechanisms by which nutrient-rich crops are developed. Key topics included the role of traditional breeding methods as well as modern techniques like marker-assisted selection (MAS) and genetic engineering in enhancing nutrient content.
- 3. Mohan Satyakar Rao Nalabolu's Presentation:
 - Focus on Rice and Cotton: Sri Mohan Satyakar Rao Nalabolu, a Junior Breeder in the R&D division at JK Agri Genetics Ltd., shared his expertise in rice and cotton breeding for nutritional improvement. He provided an in-depth overview of his work on biofortifying rice with essential nutrients like iron and zinc, and cotton with improved fiber quality for better health benefits.
 - ➤ **Key Contributions**: Sri Nalabolu highlighted the integration of biofortification techniques with traditional breeding methods in rice, emphasizing how biofortified varieties of rice can address iron and zinc deficiencies, which are prevalent in many developing regions of

the world. He also discussed ongoing research to enhance the nutritional quality of cotton, especially focusing on improving seed nutrient profiles.

➤ Challenges and Innovations: He discussed some of the key challenges faced in breeding biofortified crops, such as achieving consistent nutrient levels across different environments and ensuring the crops' market acceptance.

4. Technological Innovations in Biofortification:

> Presenters from various institutions discussed new advancements in genetic technologies, including CRISPR gene-editing and transgenic techniques, which hold promise for faster and more targeted biofortification of crops. The session also covered how these technologies could complement traditional breeding approaches.

5. Global Case Studies in Biofortification:

> Several case studies from around the world highlighted successful biofortification programs, including vitamin A-rich Golden Rice, zinc-enriched wheat, and iron-fortified beans. These case studies provided real-world examples of how biofortified crops have been successfully integrated into farming systems and their impact on improving nutritional outcomes.

6. Policy and Regulatory Frameworks for Biofortification:

A session focused on the role of governments and international organizations in creating supportive policies and regulatory frameworks for biofortified crops. Topics included regulatory challenges, intellectual property rights, and the role of global organizations like the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) in promoting biofortification.

Key Takeaways:

- **Biofortification as a Sustainable Solution**: Biofortification offers a sustainable and cost-effective solution to combat micronutrient deficiencies and improve nutritional security, especially in areas with limited access to diverse food sources.
- > Role of Plant Breeding: Plant breeding remains a critical tool in developing biofortified crops. The expertise of breeders like Sri Mohan Satyakar Rao Nalabolu is essential in advancing the development of nutrient-dense varieties of staple crops like rice and cotton.
- > Advances in Biotechnology: Genetic engineering and gene-editing technologies such as CRISPR have the potential to accelerate the development of biofortified crops, although traditional breeding methods still play an important role in achieving consistent results.
- > Importance of Multilateral Collaboration: Collaboration between the private sector, research institutions, governments, and international organizations is necessary to overcome challenges related to scaling up biofortification and ensuring that these crops reach the people who need them most.

Challenges Identified:

- > Environmental Consistency: Achieving stable and consistent nutrient levels in biofortified crops across different growing environments remains a challenge.
- Farmer Acceptance: Farmers need to be educated and incentivized to grow biofortified varieties, and market systems need to be in place to ensure the crops are sold and consumed.
- > Regulatory Hurdles: Navigating the complex regulatory frameworks for genetically modified crops and biofortification techniques is a significant barrier in many countries.

Recommendations:

1. Strengthen Research and Development:

Invest in further R&D to develop biofortified varieties with improved stability and higher nutrient content, as well as more efficient breeding methods for crops like rice, wheat, and cotton.

2. Expand Public-Private Partnerships:

➤ Increase collaboration between private companies, government bodies, and research institutions to scale up the production and distribution of biofortified crops. The work of companies like JK Agri Genetics Ltd. in biofortification should be expanded to other staple crops and regions.

3. Enhance Policy Support:

Solution Governments should implement policies that encourage the adoption of biofortified crops and align their regulatory processes with international standards, ensuring biofortification technologies are accessible to farmers.

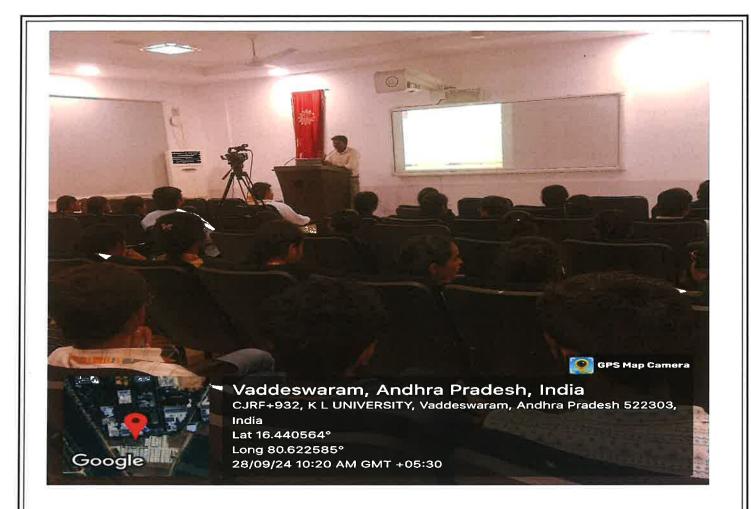
4. Increase Awareness and Education:

> Public awareness campaigns are needed to educate consumers and farmers about the benefits of biofortified crops. Consumer acceptance is critical for the success of biofortified crops in the market.

5. Monitoring and Impact Evaluation:

> There is a need for more rigorous monitoring and impact assessment programs to measure the long-term benefits of biofortified crops on nutrition and public health, as well as their economic impact on farmers.





Conclusion:

The workshop successfully provided a platform for discussing the vital role of biofortification in addressing nutritional security and the challenges faced in its implementation. The insights shared by Sri Mohan Satyakar Rao Nalabolu and other experts emphasized the importance of plant breeding, technological innovations, and multi-stakeholder collaboration in driving forward biofortification efforts. With continued research, policy support, and awareness, biofortification has the potential to be a transformative approach to tackling global malnutrition and improving food security worldwide.

This report provides an outline of the workshop's key moments, with a special focus on Sri Mohan Satyakar Rao Nalabolu's contributions. You can adjust the report further based on additional workshop details or personal insights you'd like to include!



Participants and Resource Person Group Photo



Felicitating the resource person.

> On the last day, Direct Dr. Ratna prasad Pavuluri, has given the summary of key takeaways from the FDP, highlighting the importance of continuous learning and biofortification in combating nutritional deficiencies, particularly in developing countries. Few participants provided feedback on the program. The program ended with Vote of thanks from Mrs. Ch. Manjusha, Asst Prof, Dr. Atul Singh



Participants and Resource Person Group Photo

Principal Academic Staff College.

PRINCIPAL ACADEMIC STAFF COLLEGE Koneru Lakshmaiah Education Foundation (Deemed to be University) Green Fields, VADDESWARAM-522 302



Academic Staff College

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A One-day Workshop on "Biofortification: Plant Breeding for Nutritional Security." on 28-09-2024.

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28	8283	Dr. K RANJIT	College of Agriculture	-	
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32	8551	Dr.VINEELA KODAVATI	College of Agriculture		
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Academic Staff College

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