

தமிழ்நாடு தமிழ்நாடு TAMILNADU

14 MAR 2022

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அ. இராமச்சந்திரன்
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தொழிலாளர் நீதி மன்றம்
மாவட்ட நீதி மன்ற வளாகம்
எண்: 2/2000, திருச்சி
செல் எண்: 93451 61811

Memorandum of Understanding (MoU)

between

ICAR-NATIONAL RESEARCH CENTRE FOR BANANA (ICAR-NRCB)
Tiruchirappalli, Tamil Nadu - 620 102.

And

DEEN DAYAL UPADHYAYA GORAKHPUR UNIVERSITY, GORAKHPUR,
Uttar Pradesh ((NAAC A++)

for facilitating Students' Training and Research

This Memorandum of Understanding (hereinafter referred to as MoU) is made on this Third day of the month of November in the year 2023 by and between the ICAR - National Research Centre for Banana, Tiruchirappalli, having its Head Office at Tiruchirappalli [hereinafter called "ICAR-NRCB"/First Party], a constituent Research Institution of the Indian Council of Agricultural Research, Krishi Bhavan, New Delhi-110 001 on the ONE PART and the Faculty of Science, Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, Uttar Pradesh on the



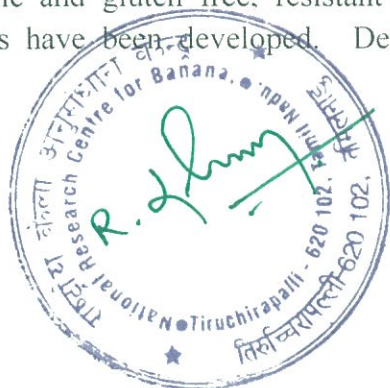
OTHER PART ["DDUGU"/Second Party] who for the purpose of this MoU are hereinafter collectively referred to as the parties).

The parties, having discussed fields of common research interests and allied activities between the two institutions, have decided to enter into long-term collaboration for promotion of students' training and quality research in cutting edge areas in accordance with the provisions contained in the Guidelines issued *vide* Letter No. 2-8/2012-HRD dated 11th December, 2012 or as revised from time to time.

WHEREAS the "First Party" is involved in conducting the basic, applied, fundamental and strategic research, technology transfer on Banana (specific mandated domain within the approved disciplines/divisions).

ICAR - National Research Centre for Banana, Tiruchirappalli, Tamil Nadu

ICAR-National Research Centre for Banana was established on 21st August 1993 at Tiruchirappalli, Tamil Nadu by ICAR, New Delhi with an aim to increase the production and productivity of banana and plantains through mission mode basic and strategic research approaches. The Centre works on four major thrust areas of research viz., Crop Improvement, Crop Production, Post-Harvest Management and Crop Protection. It has well-equipped laboratories for tissue-culture, bio-technology, soil science, nutrient management, physiology, biochemistry, entomology, nematology, fungal, bacterial, viral pathology and post-harvest technology research. ICAR - NRCB research resulted in increase in national acreage by 7.5%, production by 6.8% and productivity by 17.2% in our country in the last five years which has taken our nation to a greater heights contributing to 29% of the total banana produced with an annual business turnover of Rs.60, 000 crores. The collection and conservation efforts led to the maintenance of Asia's largest field gene bank with 374 indigenous and 124 exotic banana accessions. Released six varieties (Udhayam, Kaveri Saba, Kaveri Kalki, Kaveri Sugantham, Kaveri Haritha and Kaveri Kanya) for the benefit of farming community. Developed next generation tissue culture system using temporary immersion type bioreactors for the production of quality planting material besides micro and macropagation systems, the new biofortified banana varieties namely Grand Naine enriched with carotenoid (10 times higher) and iron (three times) through genetic transformation which are in biosafety and bioavailability trials, high density planting methods like paired row system of planting, clump management methods for perennial banana system, variety specific fertigation schedules have been developed which have enhanced the yield by 2.5 times. Developed micronutrient mixture viz., Banana Shakti in powder and liquid form that has enhanced the yield by 15-20%. Developed sea shipment export protocols for Grand Naine and traditional banana varieties like Nendran and Ney Poovan using which the Indian bananas have been sailed across Dubai and European markets fetching more than 600 crores of export business. Developed more than 40 value added products, with low glycemic and gluten free, resistant starch properties from peel, central stem, raw and ripe bananas have been developed. Developed two microbial consortia for the management of



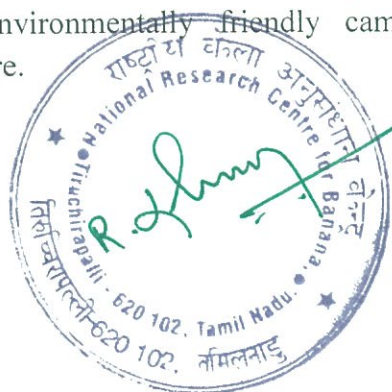
weevils, nematodes and chemical and bio-control methods have been developed for the management of races 1 and race 4 of Fusarium wilt of banana. Rapid and easy onsite diagnostic kits have been developed for BBrMV and CMV using Lateral flow immune-strip / Dipsticks. ICAR - NRCB was accredited for virus indexing and genetic fidelity testing of tissue cultured bananas by DBT, New Delhi and have certified 296.4 million plants. Obtained three patents and registered trade mark under 16 classes. Recipient of two international awards and 10 national awards under various categories. The Centre has developed good linkages with International institutes viz., Bioversity International (INIBAP), France ; IITA, Uganda; CIRAD, France ; KUL, Belgium ; IAEA, Austria, QDPI, Australia, QUT, Australia and BAPNET, Philippines and National Research Institutions like ICAR-NBPGR, New Delhi; ICAR-CPCRI, Kasargod, BARC, Mumbai; CIRCOT, Mumbai; IICT, Hyderabad; IIHR, Bangalore; NHB, New Delhi; BTC, Govt. of Andhra Pradesh, all SAUs and leading MNCs for different activities.

AND WHEREAS the “Second Party”, established *vide* established by the Government of Uttar Pradesh through the State University Act, 1973 (Act no. 10 of 1973)

Deen Dayal Upadhyaya Gorakhpur University, Gorakhpur, Uttar Pradesh

Deen Dayal Upadhyaya Gorakhpur University, established in 1957 by the Uttar Pradesh State Universities Act), is the first University to be established in Uttar Pradesh after Independence. In its long eventful journey it has constantly striven to live up to its motto, “Let noble thoughts come to me from all directions” by assimilating diverse ideas, people and beliefs into its academic and co-curricular lives. Spread over 190.96 acres, it houses seven Faculties comprising of 40 departments that have been playing a significant role in imparting holistic education predominantly to the people of the Eastern region of Uttar Pradesh, Western Bihar, and the neighboring country of Nepal since its inception. As a residential-cum-affiliating State University whose academic jurisdiction spreads across three districts of Eastern Uttar Pradesh it can boast of a rich academic legacy, illustrious alumni, experienced, qualified and dedicated faculty members, transparent and effective administrative set up, state-of-the art library, ample career growth opportunities, advanced research facilities and a vibrant and safe campus.

With more than 12000 registered students out of which more than 50% are women the University has successfully introduced a plethora of path-breaking schemes and programs for imparting holistic education to its students. The University is acclaimed nation-wide for conducting and promoting quality research, exceptional teaching and learning processes, national and international awardees, sports activities and recognitions, engagement in outreach and extension activities, robust student support system, placements in reputed government and private organizations and transparent and effective governance. The University is equipped with facilities like automated Central Library, ICT enabled class-rooms, state-of-the-art laboratories, Incubation centre, Health Centre, separate hostels for men and women, facilities for sports and games, environmentally friendly campus, gender sensitive ambience and ragging-free atmosphere.



Article 1. Scope

1.1. The Second party will recognize the First party as an Institute for conducting research/training related to the thesis requirement/training / guiding of the research students for B.Sc., M. Sc., and Ph.D. in various disciplines. The Second party will recognize Scientists of the ICAR Institute as recommended by its Director in accordance with the rules and regulations for guiding students working for the said degree.

1.2. Operational details of research effort and collaboration will be made in common research programs and/or projects restricted to specific mandated domain within the approved disciplines/divisions.

1.3. Research instrumentation facility and library facilities available with the First party and the Second party will be made available to the faculty and research scholars. However, the costs of specific consumables will be borne by the respective organizations.

1.4. There shall be an exchange of students for academic, research and training purposes. Accommodation in the Hostel shall be arranged, wherever possible, as per extant rates. The duration of exchange visits will be determined by mutual consent between both the parties.

Article 2. Management

2.1. Director of the First party and the Head of the Institution of the Second party will be responsible to work out operational details of co-operation between the two organizations and ensure proper and effective implementation of this MoU.

2.2. The Advisory Committee will meet at least once in a year alternatively in the institutions of the First party and the Second party to review the activities. This meeting shall include presentation on the academic and research activities, which should be open to the students, faculty and scientists.

Article 3. Exchange of Information

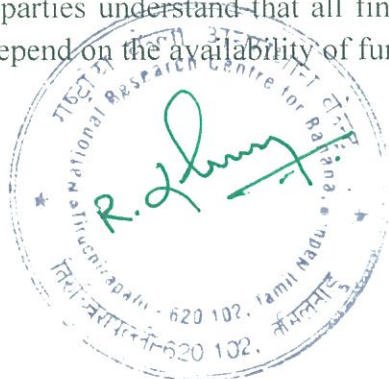
3.1. The term "information" includes scientific or technical data, results and/or methods of investigation, and other information intended to be provided, exchanged, or arising under project descriptions entered into pursuant to this MoU.

3.2. The parties support the widest possible dissemination of information. Each party in joint projects shall be given the right to use, disclose, publish or disseminate such information for any and all purposes.

Article 4. General Provisions

4.1. It is understood that the First party and the Second party subscribe to the principle of equal opportunity and do not discriminate on the basis of race, sex, age, caste or religion. Both the Institutions shall abide by these principles in the administration of this agreement and neither party shall impose criteria for exchange of scholars or students, which violate principles of non-discrimination.

4.2. Both parties understand that all financial agreements will have to be negotiated separately and will depend on the availability of funds.



4.3. Both parties acknowledge that the exchange of students from one party to the other shall be subject to the availability of funds and shall comply with the regulations and policies of the First party and the Second party.

4.4. Any research publications arising will be jointly published in accordance with the provisions laid out in Item 3.2.1C of the Guidelines for the students to conduct research for their degree program as trainees at ICAR institutions as notified *vide* Letter No. 2- 8/2012-HRD dated 11th December, 2012 or revised guidelines, if any, as may be issued from time to time.

4.5. A copy of the thesis/dissertation will be submitted to the First Party after the award of the degree by the Second party.

4.6. All questions related to this MoU arising during its term will be settled by the parties by mutual agreement. Disagreements at the operating level shall be forwarded to respective higher officials for appropriate resolution failing which an arbitrator of mutual acceptance may be identified for the settlement of dispute, if any.

4.7. All questions not foreseen related to this MoU will be handled by the parties by mutual agreement.

4.8. Nothing in this MoU is intended to affect other cooperation or collaborations between the parties.

4.9. Minimum of two students per year from M.Sc., / Ph.D., program must be sent for research work in ICAR - NRCB.

Article 5. Intellectual Property Rights

5.1. The Second party will be expected to ensure protection of the Intellectual Property Rights generated or likely to be generated during the student's research work. The ICAR (ICAR-NRCB) as the first applicant (for its institute) and the Second party shall be the joint applicants for IPRs and the students and involved scientific staff shall be included as the inventor/breeder/author. The 'ICAR Guidelines for Intellectual Property Management and Technology Transfer/Commercialization' as amended from time to time shall be the reference for exploitation of the generated intellectual property, whose management and benefits sharing shall be mutually decided in each case.

Article 6. Admission and Fees

6.1. All those who wish to register as trainees/students for research/research programmes/projects under this MoU must apply for admission at the Second party. The allocation of Major Guide/Advisor would be finalized before the registration and will be governed by the provisions laid out in Items 3.2.1A and 3.2.2A of the Guidelines for the students to conduct research for their degree programs as trainees at ICAR institutions as notified *vide* Letter No. 2-8/2012-HRD dated 11th December, 2012 or revised Guidelines, if any, as may be issued from time to time, for the students from within NARS and outside NARS, respectively.

6.2. Admission of the students and the award of degrees for different programs will be the responsibility of the Second party as per the rules and regulations.



6.3. Allotment of the students to the First party will be done by the approval of Director of the First party and Head of the Institution of the Second party.

6.4. The First party would have the right to screen the student's eligibility for admission based on their academic record and other regulations laid by the institute.

6.5. The PME Cell of the First party in consultation with the representative of the Second party shall decide the location and sharing quantum of research work.

6.6. The number of student(s) at any particular time will be subjected to the availability of research facilities and scientists' time to guide students at the First party institution.

6.7. Any student(s) admitted to the First party for research or training, if found violating the rules and regulations laid down by the First party or indulge in such activities that amount to tarnishing the image of the Institute, or cause damage to the property, the registration of such student(s) would be summarily terminated. The Second party will not complete the formalities of issuing the certificates to such students until they compensate the losses to the First party.

6.8. Fees will be charged from the students by the First party as per Guidelines for the students to conduct research for their degree programs as trainees at ICAR institutions *vide* Letter No. 2-8/2012-HRD dated 11th December, 2012 or revised Guidelines, if any, as may be issued from time to time. No fee may be charged by the First party from the students registered with AU/DU within NARES. However, a student registered with a Second party, outside NARES, will deposit fee of Rs. 20,000/- for training/research/dissertation up to duration of 3 months and @ Rs. 30,000/- per semester for the work exceeding three months. Any change in fee structure by ICAR will be applicable from the date of revision and shall be charged by the First party.

Article 7. Entry into effect, modification and termination

7.1. This MoU shall become effective on the date it is signed by the parties and shall be valid for three years extendable up to five years. Both parties shall review the status of the MoU at the end of each three/five-year period to determine any modification, whenever necessary. The period of validity of this MoU may be extended by mutual consent up to five years. This MoU may be amended by mutual written agreement and may be terminated at any time by either party upon written notification signed by the competent authority of the party initiating termination. Such notification must be given to the other party at least six months in advance from the effective date of termination.

7.2. All joint activities not completed at the expiration or termination of the MoU may be continued until their completion under the terms of this MoU.

7.3. No amendment or modification of the MoU shall be valid unless the same is made in writing by both the parties or their authorized representatives and specifically stating the same to be amendment of the MoU. The modifications/changes shall become part of the MoU and shall be effective from the date on which they are made/executed, unless otherwise agreed to.



This MoU has been executed in two originals, one of which has been retained by the First party and the other by the Second party. IN WITNESS WHEREOF, the parties have executed this MoU and represent that they approve, accept and agree to terms contained herein.

(Name and Address of the First Party)
ICAR-National Research Centre for Banana
Thogamalai Road,
Thayanur Post, Tiruchirappalli - 620 102.
Tamil Nadu, India.

(Name and Address of the Second Party)
Deen Dayal Upadhyaya Gorakhpur
University, Civil Lines,
Gorakhpur - 273009,
Uttar Pradesh, India.



Name of the Director

Dr. R. Selvarajan


Date: 03.11.2023

Signature with Seal

DIRECTOR
ICAR-National Research Centre for Banana
Thogamalai Main Road, Thayanur Post
Tiruchirappalli-620 102.

Signature with Address

Witness 1



P. Suresh Kumar
ICAR - NRC B
Trichy

Witness 2

M. S. Saraswathi
M. S. SARASWATHI, PS
ICAR - NRCB, Trichy



Name of the Vice Chancellor

Prof. Poonam Tandon Dr.


Date: 03.11.2023

Signature with Seal

Prof. Poonam Tandon
Vice-Chancellor
D.D.U. Gorakhpur, University, Gorakhpur


Signature with Address

Witness 1



PROF. RAJARSHI K. GAUR
Dept. of Biotechnology DDUGU

Witness 2



Dr. Ramwant Aupta
Coordinator Collab. & Coord
R & D cell.