

**Inter-University Partnership of
Competitive Research Grant (STHRDP)
Collaborative Research between Rajarata University of Sri Lanka and Sir John Kotelawala Defence
University**

Three Vacancies for Graduate Research Assistant (MPhil)

Research area: Natural Products/Food Science/Biotechnology

About the project:

The project is aiming to sustainable development of north central province through establishing a functional framework on selected underutilized wild fruit plants in Sri Lanka. This is competitive research grant funded by ADB to encourage collaborative research partnerships in between the Department of Bioprocess Technology, Faculty of Technology, RUSL and the General Sir John Kotelawala Defence University, in order to strengthen research collaborations to formulate products, process and services in related commercial applications such as nutraceutical, pharmaceutical and cosmeceutical developments using the advanced bioprocess technology, nanotechnology, polymer technology and engineering technology.

Title of the sub projects:

1. Evaluation of some selected underutilized wild fruits in North Central Province of Sri Lanka as a potential source for the development of functional supplements.
2. Characterization and identification of Polyunsaturated fatty acids (PUFA) of some selected seeds from underutilized Sri Lankan wild fruits for *in vitro* antiproliferative and anti-inflammatory activities.
3. Development of a food supplement with native Sri Lankan plant components with high medicinal activity.

Duration: 2 years

Key responsibilities:

- Screening the extracts of some selected wild underutilized fruits and their parts for bioactivities including antioxidant, anticancer, anti-inflammatory and hypoglycemic activity by *in vitro/in vivo* assays.
- Optimization and standardization of extracts/functional ingredients from the potent samples for nutraceutical, pharmaceutical and cosmeceutical applications and developments.
- Validating the product developed for technical know-how and commercialization

Required qualifications:

- Bachelor degree in Science, Food Science, Technology or relevant disciplines
- Effective verbal and written communication skills in English

Monthly stipend: 60,000 LKR (MPhil registration fee is covered)

Work locations: Sir John Kotelawala Defence University and Rajarata University of Sri Lanka

How to apply:

Please send your CV with the statement of purpose to Dr. Prasad Jayasooriya (principal investigator) ADBRJP4@gmail.com on or before **28/07/2022**

Please mention the subtitle of the project you apply in the covering letter.

**Inter-University Partnership of
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Two Vacancies for Graduate Research Assistant (MPhil)

Research area: Natural products

About the project:

The project is aiming to sustainable development of north central province through establishing a functional framework on selected underutilized wild fruit plants in Sri Lanka. This is competitive research grant funded by ADB to encourage collaborative research partnerships in between the Department of Bioprocess Technology, Faculty of Technology, RUSL and the General Sir John Kotelawala Defence University, in or der to strengthen research collaborations to formulate products, process and services in related commercial applications such as nutraceutical, pharmaceutical and cosmeceutical developments using the advanced bioprocess technology, nanotechnology, polymer technology and engineering technology.

Title of the sub project 01: Development of antibacterial nano-herbal formulations from underutilized fruit crops available in north central province of Sri Lanka as food additives to prevent food spoilage

Title of the sub project 02: Synthesis of nano-nutraceuticals from underutilized fruit crops available in north central province of Sri Lanka for the production of novel value-added food supplements

Duration: 2 years

Key responsibilities:

- To synthesize nano formulations using extracts of underutilized fruits available in north central province and evaluation of their potential as antimicrobial food additive and as nutraceuticals
- To optimize extraction, fractionation and bioassays of plant extracts and characterization of nanomaterials for the development of novel antimicrobial nano-herbal formulations and value-added food supplements

Required qualifications:

- BSc with Chemistry, B. Pharm, BSc in Human Biology, BSc in MLS
- Effective verbal and written communication skills in English

Monthly stipend: 60,000 LKR (MPhil registration fee is covered)

Work locations: Sir John Kotelawala Defence University and Rajarata University of Sri Lanka

How to apply:

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**Inter-University Partnership of
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University**

Vacancy for Graduate Research Assistant (MPhil)

Research area: Biodiversity

Research Title: Morphological characterization, genetic variation and diversity of selected underutilized fruit plant in Sri Lanka

About the project:

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Duration: 2 years

Key responsibilities:

1. Mapping of the distribution of underutilized fruit plants in Sri Lanka
2. Finding the morphological differences, which are important to know plant identifications for their varietal characters.
3. Discuss the research findings with taxonomical, phylogenetically, demographical, and ecological questions of great relevance for conservation

Required qualifications:

- Bachelor degree in Science, Agriculture, Technology or relevant disciplines
- Effective verbal and written communication skills in English

Monthly stipend: 60,000 LKR (MPhil registration fee is covered)

Work locations: Sir John Kotelawala Defence University and Rajarata University of Sri Lanka

How to apply:

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**Inter-University Partnership of
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Vacancy for Graduate Research Assistant (MPhil)

Research area: Natural Products

Research Title: Development of a commercial ointment with insect repellent activity using identified active compounds from plant materials. The student could gain skills in extraction, column purification, isolation of natural products, performing bioassays, scientific writing, data analysis, and presentation.

About the project:

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Duration: 2 years

Key responsibilities:

- Collection and processing of identified plant samples.
- Extraction, fractionation, and isolation of bioactive compounds from the processed plant samples.
- Performing required biological assays leading to the discovery of novel insecticides and repellents.
- Dissipation of new knowledge through research articles and conference papers.

Required qualifications:

- Bachelor of Science with a Special degree in Chemistry and Botany/Zoology/Biology as a subject from a recognized university.
- Self-motivated and innovative personality with a strong interest in performing laboratory research.
- Effective verbal and written communication skills in English.

Monthly stipend: 60,000 LKR (MPhil registration fee is covered)

Work locations: Sir John Kotelawala Defence University and Rajarata University of Sri Lanka

How to apply:

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**Inter-University Partnership of
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Vacancy for Graduate Research Assistant (MPhil)

Research area: Bio fertilizer

Research Title: Nitrogen fixing photosynthetic bacteria based biofertilizer and organic fertilizer for revolutionizing the practices of underutilized fruit cultivation.

About the project:

The project is aiming to sustainable development of north central province through establishing a functional framework on selected underutilized wild fruit plants in Sri Lanka. This is competitive research grant funded by ADB to encourage collaborative research partnerships in between the Department of Bioprocess Technology, Faculty of Technology, RUSL and the General Sir John Kotelawala Defence University, in or der to strengthen research collaborations to formulate products, process and services in related commercial applications such as nutraceutical, pharmaceutical and cosmeceutical developments using the advanced bioprocess technology, nanotechnology, polymer technology and engineering technology.

Duration: 2 years

Key responsibilities:

- Studying the potential of utilization of photosynthetic bacteria as nitrogen fixing biofertilizers to enhance growth parameters and productivity of underutilized crops.
- Incorporation of phosphorous accumulating microorganisms to improve biomass production in formulation of organic fertilizers.
- Evaluating the potential of utilizing photosynthetic bacterial biofertilizer and organic fertilizer together to improve the nutrient use efficiency in underutilized crop cultivation.

Required qualifications:

- Bachelor degree in Science, Agriculture, Technology or relevant disciplines
- Effective verbal and written communication skills in English

Monthly stipend: 60,000 LKR (MPhil registration fee is covered)

Work locations: Sir John Kotelawala Defence University and Rajarata University of Sri Lanka

How to apply:

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**Inter-University Partnership of
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Vacancy for Graduate Research Assistant (MPhil)

Research area: Molecular Biology/ Biotechnology

Research Title: Protective effect of underutilized fruit crops available in North Central province of Sri Lanka against TRAIL-mediated Chronic Kidney Diseases.

About the project:

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Duration: 2 years

Key responsibilities:

- Perform scientific literature search compiling review reports
- Conduct basic and advanced laboratory procedures including safe handling/ processing of samples, tissue culture, and molecular techniques
- Handling, analysis, and interpretation of research generated data and manuscript/report preparation

Required minimum qualifications:

- Bachelor's degree in Science, Agriculture, Technology or relevant disciplines. Preference will be given for the specialization of molecular biology/ biotechnology
- Effective verbal and written communication skills in English

Additional qualifications:

- Experience in research, and publication record
- Working experience with basic and advanced laboratory procedures

Monthly stipend: 60,000 LKR (MPhil registration fee is covered)

Work locations: Sir John Kotelawala Defence University and Rajarata University of Sri Lanka

How to apply:

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**Inter-University Partnership of
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Vacancy for Graduate Research Assistant (MPhil)

Research area: Natural products

Research Title: Identification and characterization of anti-melanogenic properties of underutilized fruit crops available in North Central province of Sri Lanka using B16F10 murine melanoma cells.

About the project:

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Duration: 2 years

Key responsibilities:

- To identify the effective tyrosinase inhibitors using *in-vitro* mushroom tyrosinase enzyme inhibition assay from underutilized fruit crops.
- To establish B16F10 murine melanoma cell-based and zebrafish-based melanin quantification assays to screen the anti-melanogenic properties of these isolates.
- To investigate detailed cell signaling pathways associated with the anti-melanogenic properties of the most effective isolates.
- Formulation of skin whitening creams using those effective underutilized fruit crops.

Required qualifications:

- Bachelor of Science in relevant field (Previous experience in mammalian cell culture will be an added advantage)
- Effective verbal and written communication skills in English

Monthly stipend: 60,000 LKR (MPhil registration fee is covered)

Work locations: Sir John Kotelawala Defence University and Rajarata University of Sri Lanka

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