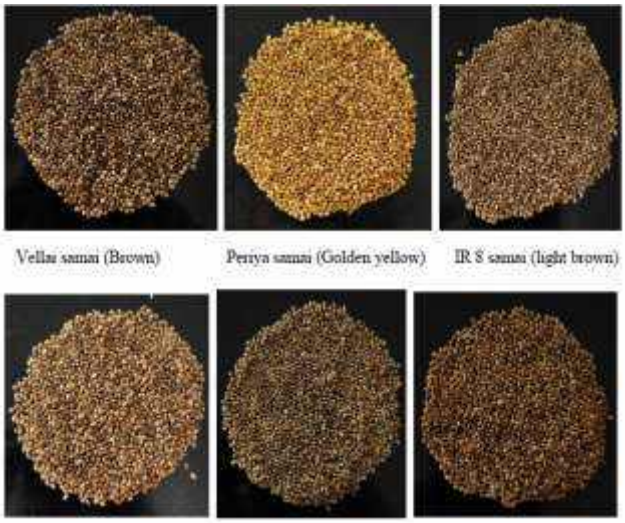
University : Karunya Institute of Technology and Sciences
Country : India
Web Address : www.karunya.edu

[1] Setting and Infrastructure (SI)

[1.22] Conservation: Plant, Animal, and Wildlife, Genetic Resources for Food and Agriculture Secured in either Medium or Long-Term Conservation Facilities

Polyhouse Facility at KITS for Planting Vegetables for Campus Residents

Conservation of Rice Landraces



Siru samai Kalman Kothu samai

Conservation of Littlemillet Landraces

Conservation of Underutilized Fruit Trees (Passion Fruit – *Passiflora edulis*)

Butterfly Garden

Medicinal Garden

Mist Chamber for Nursery Management

Shade Net House for Hardening Seedlings

Livestock Conservation

Poultry Farming – Guinea Hens and Country Chicks

Duck Farming

Beekeeping to encourage Natural Pollination

Description

KITS campus is a mini biodiversity conservation area, native plant species, medicinal plant garden, flowering plants that attract bees, birds, beetles and other animals like squirrels levarages the maintenace of the ecosystem. It is like mini bio-reserve rich in native species and endemic plants. Few exotic and endangered plants are maintained in polyhouse. We are also involved in conserving indigenous landraces from tribal villages for selecting potential donor parents for future crop improvement programmes. Seeds of different landraces of rice and millets are collected and conserved. A crop cafeteria is also raised in the south farm. Some of the conservation efforts are detailed above.

KARUNYA UNIVERSITY
(Karunya Institute of Technology and Sciences)
(Declared as Deemed-to-be-University under section-3 of the UGC Act, 1956)
KARUNYA NAGAR, COIMBATORE – 641 114
*****

Dr. E. J. James
Officiating Vice-Chancellor

KU/VC/OO/ 53 /2013
June 24, 2013

OFFICE ORDER

Sub: Establishment of Centre for Conservation and Management of Natural Resources
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Considering the importance of natural resource management, especially the conservation of water, energy and food, and also treatment of solid and liquid waste in the campus, a Centre for Conservation and Management of Natural Resources is established with immediate effect.

The main purpose of the Centre is to develop and sustain an eco-friendly green campus and to conserve the flora and fauna as well as other natural resources in the most effective manner in the campus, thereby contributing to sustainable development of natural resources envisaged in MDG of the UN. This initiative is also important in the context of global warming and of climate change.

The major functions of the Centre are:

1. Conservation of water resources within the campus
2. Practicing renewable energy within the campus
3. Conducting water and energy audits
4. Waste water treatment leading to recycling and reuse
5. Planting indigenous trees of the Western Ghats in the campus
6. Advising the Construction and Management Department on environment friendly practices
7. Introducing precision farming practice

The Centre will be functioning under the guidance of Science and Engineering Departments which will nominate one faculty member each to serve in the Centre. The implementation of the plans will be carried out by the Construction and Maintenance Department.

Necessary funds will be made available by the Finance Section depending upon the requirements from time to time.

E. J. JAMES 24/6/13

To
1. Registrar
2. Directors of Schools
3. Finance Officer
4. Chief Engineer

1. Policy for conservation of natural resources

A policy to conserve and mange natural resources at KITS dated 14.6.2013 was framed to ensure the sustainability of KITS ecosystem. Accordingly, concerted efforts were being taken to implement the program and KITS has acheived >75% of the conservation program.

2. Polyhouse for planting vegetables for campus residents

A maximum of 1800 plants/ season have been raised using grow bags in appropriate potting media with vermicompost. A maximum of four and a minimum of two to three types of vegetables from the same group have been raised per season and the entire space of the poly house was allotted accordingly as per the spacing requirement of vegetables. Besides vegetables, greens were also cultivated in polyhouse with organic inputs to cater the need of campus residents. Few exotic and endangered plants are maintained in polyhouse.

3. Conservation of traditional landraces and underutilized fruit trees for crop improvement programme

KITS also involved in conserving indigenous landraces from tribal villages for selecting potential donor parents for future crop improvement programmes. About 70 little millet landraces and 224 indigenous rice landraces collected from the tribal inhabitants and different agro-ecological zones of India respectively are being conserved in the conservation facility available at Plant Breeding Division of School of Agricultural Sciences. A crop cafeteria is also raised in the south farm. Underutilized fruit trees with supreme health benefits (eg. Passion fruit: *Passiflora edulis*) are also conserved in the north farm of KITS.

4. KITS Butterfly garden

Butterfly garden was established in the campus with an area of 0.7 acres which is located under the foothills of Western Ghats with diverse flora and fauna. To encourage the habitat that is conducive for butterflies, various host plants and nectar plants (approximately 35 species) were planted in the garden with a small pond serving as a water source for the butterflies. The Butterfly Garden serves as a significant contribution towards conserving the native species and also for environmental education purpose. Butterfly garden will provide an opportunity for the students and the public to see the different species of butterflies in one place, their life cycle, host plants and nectar plants that are suitable for their development. So far, 37 different species of butterflies have been documneted in KITS butterfly garden.

5. Conservation of medicinal plants

Indigenous and Herbal medicine is one of the 25 technology missions of KITS. The ambient climatic conditions in KITS provide good growth conditions for the medicinal plants. The medicinal garden spans across an area of 70 cents. KITS medicinal garden houses 101 medicinal plants including annuals, herbs and shrubs and are actegorized based on their properties such as anti-cancerous, anti-asthmatic, anti-analgesic, anti-inflammatory, anti-diabetic, skin care, insect bites, hair care, gastrointestinal disorders and liver and kidney functioning. The trees are spaced at 5X5m and the shrubs and climbers at 3X3m and the annuals or herbs are planted on raised beds.

6. Mist chamber for nursery management

Nursery plants propagated by the cutting method are grown in a mist chamber. Temperature and humidity inside the mist chamber are controlled through automated control systems. In a mist chamber, an environmental parameter such as relative humidity is maintained artificially at a high level with the help of the fogging system, which sprays water under high pressure. This induces rooting and facilitates acclimatization in nursery plants. High relative humidity favours better root initiation and the cooling effect prevents the cutting from drying out. This method results in faster rooting of the cuttings, creates an optimum microclimate for better root initiation and development, and a higher success rate in the propagation of hardwood cuttings.

7. Shade net house for hardening seedlings

This shade net house provides optimum temperature and aeration for the growing plants. Hence, it is utilized for hardening the plants which is multiplied under mist chamber conditions. Moreover, certain plants like ornamental plants can be multiplied under shade net houses. Because 50 % shade net level is optimum for providing a conducive environment for the multiplication of ornamental plants.

8. Animal husbandry and poultry farming

Cattle Farming provides milk for the hostels and residents of the Karunya campus. Birds such as ducks, guinea hen are being reared for egg purpose and also for conservation. A veterinary clinic is also functioning to cater to the requirements of the local rural community.

9. Conservation of Honey bees in the campus

To encourage natural pollination and sustain the biodiversity of KITS campus, honey bee rearing is being carried out. Students are given technical know-how to handle honey bees and apiculture-based entrepreneurship trainings under the flagship of *student ready programme* termed as Experiential Learning Programme. KITS has documented natural colonies of four major honey bee species such as Indian bees (*Apis indica*), stingless bee (*Tetragonella iridipenis*), little bees (*Apis florea*) and rock bee (*Apis dorsata*). Among them *Apis indica* was domesticated and reared at KITS campus for honey and bee based value-added products.

Additional Evidences Link:

i) Policy on Environmental Sustainability: https://drive.google.com/file/d/1Zw2UDeg3G4sFDnZu0yeXYbqV0oaHzP3v/view?usp=drive_link

ii) Additional information on landraces conservation, butterfly garden and medicinal garden of KITS: https://drive.google.com/file/d/15qWahDY9RH96TEn8JvEiWlWv_ns_qsOZ/view?usp=sharing