SANATANA DHARMA COLLEGE

ALAPPUZHA

Affiliated to the University of Kerala
Reaccredited by NAAC with A+ grade

CRITERION: 7

Institutional Values and Best Practices

7.2

Sanatanam Samatha

(Balance, Conservation and Sustainability)

DECLARATION

The best practice, "Sanatanam Samatha" encompasses the following initiatives of Sanatana Dharma College committed to sustainable development and environmental conservation. These initiatives raise awareness on the essential balance of ecosystems that is necessary for life on the planet.

SANATANA DHARMA COLLEGE Accredited With A+ Grade By NAAC Alappuzha-688 003

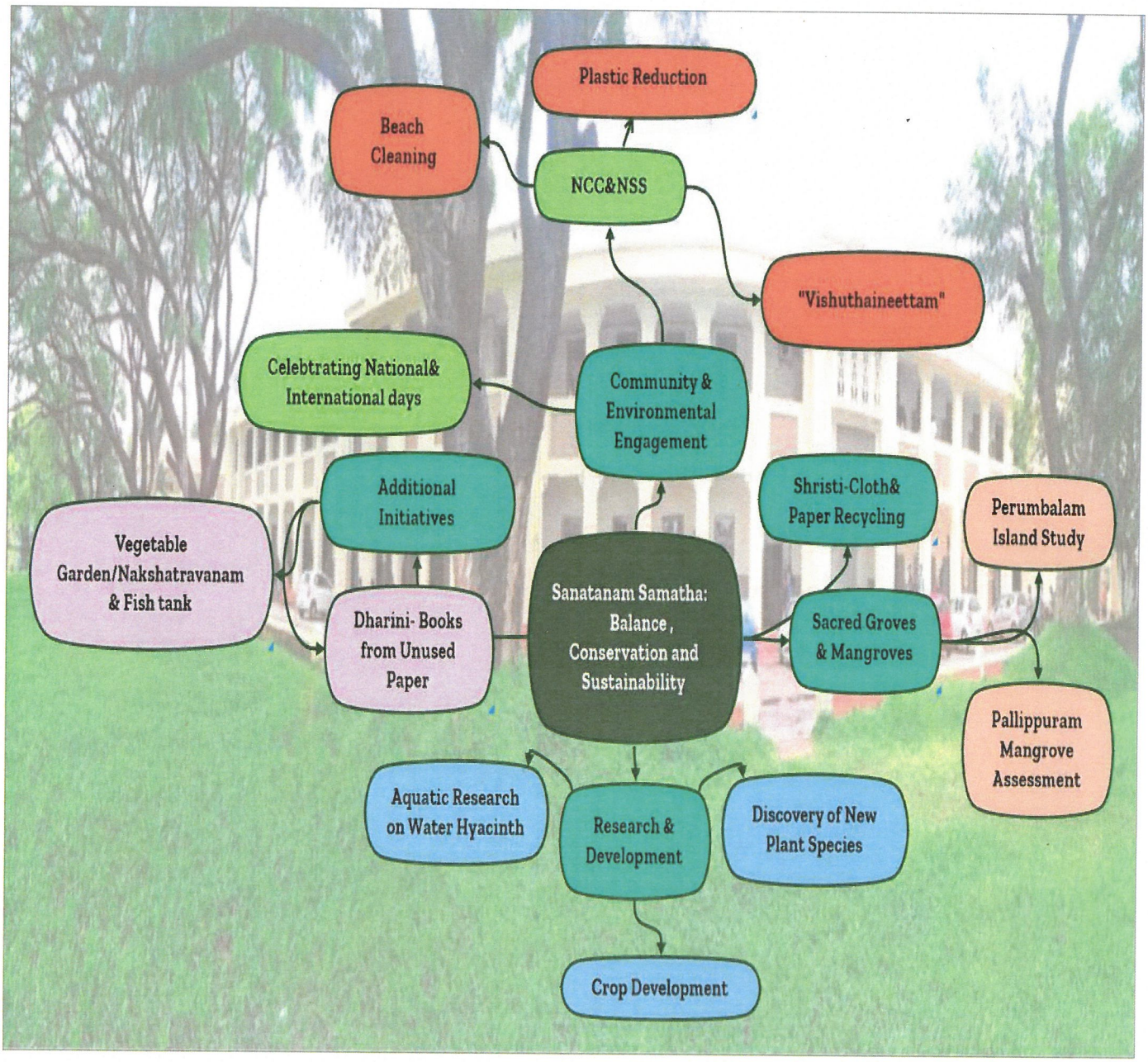
Principal

Prof. (Dr.) PREMA K.H
PRINCIPAL
PEN 467693
S D COLLEGE ALAPPUZHA

Sanatanam Samatha:

Balance, Conservation and Sustainability

India's biodiversity and culture play a crucial role in encouraging sustainable development and environmental conservation. Sanatana Dharma College, Alappuzha, signifies and pursues these principles through its best practice, "Sanatanam Samatha".The Sanskrit term "Samatha" implies equity, balance, peace and serenity. The best practice, "Sanatanam Samatha" is hence a confluence of ecological balance, equity of all beings, peaceful coexistence with nature and serenity of lifestyle. These values are actualized through the curriculum, co-curricular activities, research, extension programmes and community engagement endeavours.



1. The Green Army – Scope and Objectives

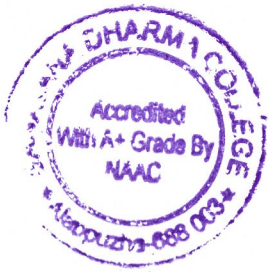
The Green Army initiative was established on 13 March 2022 to promote cleanliness, waste management, sustainability and environmental awareness among the college community. The Green Army has undertaken various activities such as cleanup drives, waste segregation and recycling, composting training, beach cleanups, and educational sessions on sustainability.

The objectives of the Green Army include maintaining cleanliness and hygiene on campus, ensuring proper waste disposal and management, building a sustainable green environment, and educating the community about sustainability through workshops, seminars, and campaigns.

The Green Army has organized a range of events and activities to achieve these objectives. These include campus health and safety initiatives, training sessions on aerobic composting, interactive discussions and meetings on waste management and cleanliness, celebrations of World Ocean Day and World Environment Day, online training sessions on beach cleanup surveys, and the appointment of caretakers for restrooms to ensure cleanliness and safety.

Nonetheless, the positive impact of the Green Army's efforts is evident in the development of a culture of responsibility and vision towards creating a sustainable, environmentally friendly, and zero-waste campus. The collective efforts of students, faculty, and staff involved in the Green Army have sparked a positive spirit in the mindset of the college community, emphasizing the importance of environmental stewardship and sustainability.

SANATANA DHARMA COLLEGE
ALAPPUZHA



2. Shrishti – Scope and Objectives

'Shristi' is an innovative venture by the Entrepreneurship Development Club (ED Club) of Sanatana Dharma College, Alappuzha, under the District Industries Centre (DIC). Launched to enhance entrepreneurial skills among students, Shristi empowers them with design thinking, collaborative problem solving, and leadership abilities. The initiative focuses on turning discarded materials into valuable products, starting with the recycling of cloth and paper.

Cloth recycling involves collecting and sorting old clothes into reusable items, rags, and fibre categories, which are then processed into items like pouches, purses, and toys. Paper recycling converts unused paper from students' assignments into notepads and paper pens, marketed through digital platforms like Instagram and WhatsApp. Shristi has successfully engaged students, resulting in productive brainstorming sessions and positive reception of its products, which were put on sale in February 2020.

Challenges and New Vistas

Despite challenges such as selecting innovative ideas, securing financial support for Research & Development, lack of vocational training, balancing development with academic schedules, and the pandemic, Shristi has managed to thrive. Future plans include

expanding operations by involving students from other departments, forming a self-help group to promote community spirit, and seeking support from renowned designers for member training. Shristi exemplifies a commitment to socially responsible entrepreneurship by converting waste into valuable products while enhancing students' entrepreneurial skills and creativity.

3. Other Environmental and Community Engagement Activities

The college community actively participates in celebrating National and International Days to promote environmental awareness and community engagement. Many such initiatives are organized by the NCC and NSS, including "Vishuthaineettam", beach cleaning, plastic reduction awareness, nature education camps, and tree planting. These activities aim to nurture a sense of responsibility and awareness about environmental conservation among students and the broader community.


NEHRU YUVA KENDRA
ALAPPUZHA
Ambalapuzha, Haripad Block Level
WEBINAR ON
Jal Shakthi Abhayan
Catch the Rain
Martyr's Day
JAN 30 @3 pm
Inaugurated by
C. R. Neelakandan
(Environmental Activist)
UNIT NO:
Alappuzha, Kerala, India
Sanathanapuram P O, near SD College, Kalarcode, Thookkukulam,
Alappuzha, Kerala 688003, India

4. Dharini Initiative

Dharini is an initiative of the Department of English where students create books from unused papers of assignment records and old books. Led by Dr. Priya P.S., the students completed the task and distributed the books to teachers and students of all departments after officially handing them over to Prof. (Dr.) Prema K.H., the Principal. This initiative not only promotes recycling and waste reduction but also encourages creativity and resourcefulness among students.

5. Biodiversity, Conservation and Research

The research practices of the institution also embody its focus on balance, conservation and sustainable development. The college conducts aquatic research on water hyacinth, maintains botanical and medicinal plant gardens, and engages in crop improvement studies. Research on the effects of climate change on biodiversity and the discovery of new plant species are also integral parts of the environmental engagement of the institution.

In search of new plants

The Research Department of Botany of Sanatana Dharma College, Alappuzha has been actively involved in the taxonomic identification of the plants of the Western Ghats. In-depth studies in the field have led to the findings of new species and new distributional records. In such a way, around 15 new plant species were discovered by the department in the last 5 years.

- The college bears the distinction of having a new plant species discovered and named after it. ***Phyllanthus sanatanadharmae (Phyllanthaceae)*** identified from the Western Ghats, by the research team led by Dr. Jose Mathew, Asst. Professor, Dept. of Botany has etched the name of the college indelibly in the realm of Botanical research.

Mathrubhumi
മാതൃഭൂമി

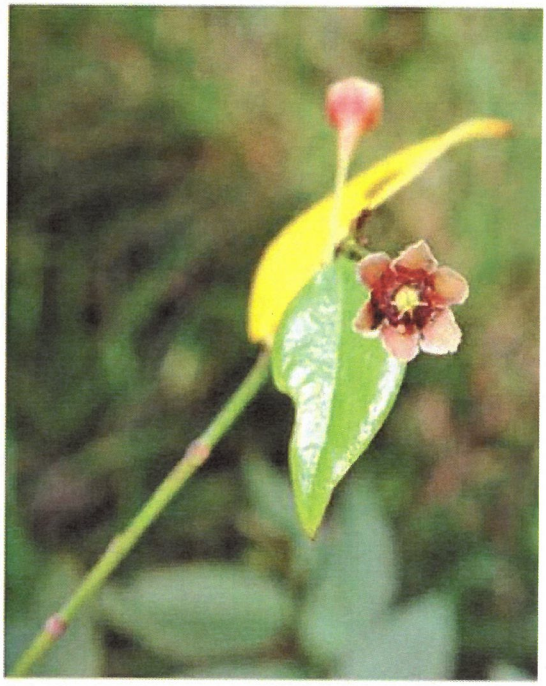
എസ്.ഡി.കോളേജിന്റെ പേരിൽ ശാസ്ത്രലോകത്ത് പുതിയ സസ്യം

ആലപ്പുഴ ▸ ആലപ്പുഴ സനാതനധർമ കോളേജിന്റെ പേരിൽ പുതിയൊരു സസ്യത്തെ ശാസ്ത്രലോകം വരവേറ്റു. 'ഫില്ലാന്തസ് സനാതനധർമേ' എന്നാണ് പേര്. നെല്ലിയും കീഴാർനെല്ലിയും ഉൾപ്പെടുന്ന ഫില്ലാന്തേസി എന്ന കുടുംബാംഗമാണ് പുതിയ സസ്യം.

എസ്.ഡി.കോളേജിലെ സസ്യശാസ്ത്രവിഭാഗം അധ്യാപകൻ ഡോ. ജോസ് മാത്യു, കേരള പ്ലാന്റേഷൻ കോർപ്പറേഷൻ ഉദ്യോഗസ്ഥൻ ഡോ. റെജി യോഹന്നാൻ എന്നിവരാണ് ഈ കണ്ടെത്തലിനു പിന്നിൽ. പുതുതായി കണ്ടെത്തിയ സസ്യത്തിന് ഇവർ സനാതനധർമ കോളേജിന്റെ പേരുനൽകുകയും അത് ശാസ്ത്രലോകം സ്വീകരിക്കുകയുമാണ് ചെയ്തിട്ടുള്ളത്. ഈ വർഷം പ്ലാറ്റിനം ജൂബിലി ആഘോഷിക്കുന്ന എസ്.ഡി.കോളേജിന് ഈ നേട്ടം തിളക്കംകൂട്ടും.

കോഴിക്കോട് ജില്ലയിലെ വെള്ളരിമലയിലെ നിത്യഹരിത വനമേഖലയിലാണ് ഈ സസ്യം കണ്ടെത്തിയത്. മൂന്നുമീറ്റർവരെ ഉയരംവെക്കുന്ന സസ്യത്തിൽ ആൺ-പെൺ പൂക്കൾ വ്യത്യസ്തമായി രൂപപ്പെടുന്നു. ചോലക്കാടുകളിൽ നാലിടങ്ങളിലായി 15 എണ്ണത്തെ മാത്രമേ കണ്ടെത്തിയിട്ടുള്ളൂ. അതിനാൽ അതീവ സംരക്ഷണപ്രാധാന്യമുള്ള ഇനമായി കരുതപ്പെടുന്നു.

സസ്യത്തെ സംബന്ധിച്ച പ്രബന്ധം ന്യൂസീലാൻഡിൽനിന്ന് പ്രസിദ്ധീകരിക്കുന്ന ഫൈറ്റോടാക്സ എന്ന അന്താരാഷ്ട്ര ജേണലിന്റെ പുതിയ ലക്കത്തിൽ പ്രസിദ്ധീകരിച്ചിട്ടുണ്ട്. സസ്യത്തിന്റെ സംരക്ഷണമാർഗങ്ങളും രാസസംയുക്തങ്ങളും സംബന്ധിച്ചുള്ള പഠനംനടത്താൻ ഒരുങ്ങുകയാണ് ഗവേഷകർ.



ഫില്ലാന്തസ് സനാതനധർമേ എന്ന സസ്യം

06/05/2021 CHENGANNUR,MAVELIKKARA Pg 05

Other Plant Species Discovered

1. *Christisonia flavirubens* (Orobanchaceae)
2. *Lagenandra kunkichirimuseumensis* (Araceae)
3. *Piper kurichyarmalicum (Piperaceae)*
4. *Piper ovalifructum (Piperaceae)*
5. *Ixora lavanya* (Rubiaceae)
6. *Henckelia viridiflora* (Gesneriaceae)
7. *Seidenfia manikathila* (Orchidaceae)
8. *Chiloschista confusa* (Orchidaceae)
9. *Sonerila sulpheyi* (Melastomataceae)
10. *Cleisocentron neglectum (Orchidaceae)*
11. *Oberonia saintberchmansii* (Orchidaceae)
12. *Sonerila epeduncula* (Melastomataceae)
13. *Canthium vemabanadensis* (Rubiaceae)

New Distributional Records

1. *Peristylus parishii (Orchidaceae)*
2. *Arisaema madhuanum* (Araceae)
3. *Liparis tschangii* (Orchidaceae)

ഇമ്പേഷ്യൻസ് ഹനാ പുതിയ ഹൈബ്രിഡ് സസ്യം

ആലപ്പുഴ

ഇമ്പേഷ്യൻസ് ഹനാ

ഇമ്പേഷ്യൻസ് ഹനാ എന്ന പുതിയ ഹൈബ്രിഡ് സസ്യത്തെ ആലപ്പുഴ എസ്ഡി കോളേജ് അവതരിപ്പിച്ചു. കേരള ജൈവവൈവിധ്യ ബോർഡുമായി സഹകരിച്ച് കോളേജിലെ സസ്യശാസ്ത്ര വിഭാഗം സംഘടിപ്പിച്ച ദ്വിദിന സെമിനാറിന്റെ ഉദ്ഘാടനസമ്മേളനത്തിലാണ് പുതിയ സസ്യത്തെ അവതരിപ്പിച്ചത്. ബാൽസം ഇനത്തിൽപ്പെട്ട ഇമ്പേഷ്യൻസ് പാരസൈറ്റിക്ക, ഇമ്പേഷ്യൻസ് വയലേഷ്യ എന്നീ സസ്യങ്ങളെ സങ്കലനംചെയ്താണ് പുതിയ സസ്യം രൂപപ്പെടുത്തിയത്. കോളേജിന്റെ സാങ്കേതികസഹായത്തോടെ പിരുമേടിനടുത്തുള്ള ജോന്നാസ് ഓർക്കിഡ്സ് ഗാർഡനിലാണ് സസ്യം രൂപപ്പെടുത്തിയത്. ഗാർഡൻ ഉടമ മാത്യു ജോസ് മാത്യു മകൾ ഹനായുടെ പേരാണ് സസ്യത്തിന് നൽകിയത്. മനോഹരമായ പൂക്കൾ പുതിയ ചെടിയെ ആകർഷകമാക്കുന്നു. ജൈവവൈവിധ്യ ബോർഡ് ടെക്നിക്കൽ സപ്പോർട്ട് ഗ്രൂപ്പ് അംഗം പ്രൊഫ. ഡോ. ജി നാഗേന്ദ്രപ്രഭു സസ്യം അവതരിപ്പിച്ചു. വനപുഷ്പ സസ്യങ്ങളെ സംബന്ധിച്ച സെമിനാർ പ്രിൻസിപ്പൽ പ്രൊഫ. കെ എച്ച് പ്രേമ ഉദ്ഘാടനംചെയ്തു. സസ്യശാസ്ത്രവിഭാഗം തലവൻ പ്രൊഫ. ഡോ. സി ദിലീപ് അധ്യക്ഷനായി. ജൈവവൈവിധ്യ ബോർഡ് ജില്ലാ കോ-ഓർഡിനേറ്റർ ശ്രുതി ജോസ്, ഡോ. ജോസ് മാത്യു, ഡോ. എസ് ശ്രീരഞ്ജിനി എന്നിവർ സംസാരിച്ചു. ഡോ. അനൂപ് ബാലൻ, സലിം പിച്ചൻ എന്നിവർ ക്ലാസെടുത്തു.

ദേശാഭിമാനി Sat, 25 February 2023
https://epaper.deshabhimani.com/c/71777367

പശ്ചിമഘട്ടത്തിൽ പുതിയ പരാദസസ്യം

പ്രത്യേക ലേഖകൻ

ആലപ്പുഴ

ക്രിസ്റ്റിസോണിയ എമിനൂസൻസ്

കണ്ണൂർ പൈതൽമലയിൽ ക്രിസ്റ്റിസോണിയ വിഭാഗത്തിലെ പുതിയ ഇനം പരാദസസ്യം കണ്ടെത്തി. കുറിഞ്ഞി ഇനത്തിൽപ്പെട്ട സസ്യങ്ങളുടെ വേരുകളിൽ വളരുന്ന ഇതിന് ക്രിസ്റ്റിസോണിയ എമിനൂസൻസ് എന്നാണ് ശാസ്ത്രനാമം.

ചുവപ്പും മഞ്ഞയും കലർന്ന ഇവയുടെ പൂക്കളാണ് ഈ പേരിന് കാരണം. ഇലകളോ ഹരിതകമോ ഈ വിഭാഗം സസ്യങ്ങളിലില്ല. പൂർണമായും ആതിഥേയസസ്യത്തെ ആശ്രയിച്ച് ജീവിക്കുന്ന ഇവയ്ക്ക് ചെറിയ വേരുകളും പൂക്കളും കായ്കളും മാത്രമാണുള്ളത്. നിറയെ രോമാവൃതമായ പൂക്കളും ഒരേ നിറയിൽ നിൽക്കുന്ന പുരുഷകേസരങ്ങളും പ്രത്യേകതകളാണ്. ദീർഘകാലത്തെ ഇടവേളകളിലാണ് ആതിഥേയസസ്യമായ കുറിഞ്ഞിച്ചെടികളിൽ പൂക്കാലമെത്തുക. പൂവിട്ട് കായ്കൾ ഉണ്ടായശേഷം അവ കൂട്ടമായി നശിക്കും. ഇങ്ങനെ നശിക്കുന്ന കുറിഞ്ഞിച്ചെടികളുടെ വേരുകൾ മഴക്കാലത്ത് അഴുകിത്തുടങ്ങുമ്പോൾ കുമിളുകളുടെ സഹായത്തോടെ അവയിൽനിന്ന് വെള്ളവും ലവണങ്ങളും സ്വീകരിച്ചാണ് ഈ സസ്യം വളരുന്നത്.

ഏതാനും മാസങ്ങൾ മാത്രമാണ് ആയുസ് ഉള്ളതെങ്കിലും വിത്തുകൾക്ക് വർഷങ്ങളോളം അങ്കുരണശേഷിയുണ്ട്. ആലപ്പുഴ സനാതന ധർമ കോളേജിലെ സസ്യശാസ്ത്രവിഭാഗം അധ്യാപകൻ ഡോ. ജോസ് മാത്യു, വയനാട് സ്വാമിനാഥൻ റിസർച്ച് ഫൗണ്ടേഷനിലെ സീനിയർ ടെക്നിക്കൽ ഓഫീസർ സലിം പിച്ചൻ എന്നിവരാണ് കണ്ടെത്തലിന് പിന്നിൽ. പോളണ്ടിൽനിന്ന് പ്രസിദ്ധീകരിക്കുന്ന ബയോഡൈവേഴ്സിറ്റി: കൺസർവേഷൻ, റിസർച്ച് എന്ന ശാസ്ത്രമാസികയുടെ പുതിയ ലക്കത്തിൽ ഈ സസ്യത്തെ സംബന്ധിച്ച പ്രബന്ധം പ്രസിദ്ധീകരിച്ചു.

ദേശാഭിമാനി Wed, 11 January 2023
https://epaper.deshabhimani.com/c/71380162

6. From Lab to Field – Research Based Community Training

(Value Added Products from Aquatic Weeds)

The Department of Zoology, led by Dr. G.Nagendra Prabhu, actively engages local communities through training programs focused on harnessing aquatic weeds for value added products. These initiatives aim to promote sustainable livelihoods and environmental conservation among community members. The training covers sustainable methods for identifying and harvesting aquatic weeds, ensuring minimal ecological impact. Participants also receive hands-on training in processing aquatic weeds into diverse products such as biofertilizers, handicrafts, and organic compost.

The works facilitate market linkages to help community members access markets and promote entrepreneurship. By empowering communities with these skills and opportunities, we not only mitigate the ecological effects of invasive aquatic weeds but also promote economic resilience and product diversification at the grassroots level. These efforts underscore our commitment to integrating environmental responsibility with community development through practical education and sustainable practices.





Team Weed Watch with management and IQAC of SD College. An International Project on Water hyacinth (weed) management. Dr. G Nagendra Prabhu, Professor, SDC represents SDC in this project

Student start-up decks up colleague's wedding venue with water hyacinth-based creations

Krishna Kumar K E
Published: March 26, 2024 05:49 PM IST | Updated: March 26, 2024 06:06 PM IST

Student startup's eco-friendly endeavours earn praise from Governor, UGC secretary

Krishna Kumar K E
Published: January 27, 2024 05:37 PM IST

UGC Secretary Prof Manish R Joshi's appreciative letter and products made out of water hyacinth by the student startup. Photo: Special arrangement

Topic | Business

7. Nakshathravanam and Vegetable Garden

The Nakshathravanam initiative involves maintaining a garden of plants connected to birth stars. This unique garden serves as a source of traditional knowledge and promotes biodiversity conservation. Alongside this, the college also maintains a vegetable garden, contributing to sustainable food production and hands-on learning experiences for students.

8. Sacred Groves and Mangrove Conservation

The Palippuram Mangrove Assessment is a comprehensive study on the biodiversity of mangrove ecosystems, particularly focusing on the Pallippuram Islands in the Alappuzha district of Kerala, India. The study highlights the ecological significance of mangroves, which are under threat due to human encroachment. Conservation efforts by various organizations aim to protect and replenish these vital ecosystems.

The study involves a detailed analysis of mangrove distribution patterns using the species area method and quadrat analysis. It also assesses the conservation status of endemic plants and animals in the region. The study identifies a total of 398 species of flowering plants (angiosperms), 14 species of pteridophytes, and one species of gymnosperm on the island. The Fabaceae family is the most dominant, with 29 species.

Research findings include a list of flora and fauna, including endemic and rare species, and provide a detailed taxonomic breakdown. The study emphasizes the importance of endemism in the Western Ghats and the high degree of species richness and endemism in tropical forests. The study notes that out of the 150 important

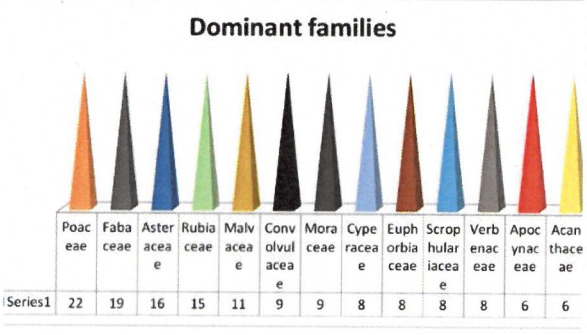
botanical sites identified for conservation action, five are in India, including the Western Ghats.

The work concludes with a list of birds and butterflies found in the study area, indicating the rich biodiversity of the island. The study emphasizes the need for conservation efforts to protect the unique and diverse ecosystems of the Pallippuram Islands.

The Perumbalam Island study is a technical report submitted by the District Coordinator of the Kerala State Biodiversity Board, Alappuzha, detailing a floristic inventory and diversity assessment of miniature sacred groves on Perumbalam Islands in Alappuzha, Kerala. The study, conducted in February 2021, aimed to estimate the flora of these groves and assess their endemic plants, which are critical for biodiversity conservation.

Biodiversity, defined as the variability of life forms on Earth, is unevenly distributed and influenced by various factors such as altitude, soil, temperature, geography, and precipitation. India is rich in biodiversity, with Kerala being a state that exhibits high species diversity due to its tropical climate and rich soil. The document emphasizes the importance of biodiversity for ecosystem health and global biogeochemical cycles.

The study area, Perumbalam Island, is located within the Vembanad Lake, the largest lake in India and a Ramsar site. The island has a high density of plant species and is home to numerous miniature sacred groves, which are traditionally protected areas of vegetation associated with deities and ancestral spirits. These groves are vital for the conservation of flora and fauna and are often associated with religious rituals and cultural aspects.



ജൈവവൈവിധ്യ ഭാരവ്യക്തി
കേരള സംസ്ഥാന ജൈവവൈവിധ്യ ബോർഡ്
KERALA STATE BIODIVERSITY BOARD
A statutory and autonomous body, Government of Kerala
Kailasam, T.C. 24/3219, No. 43, Belhaven Gardens, Kowdiar P.O.,
Thiruvananthapuram - 695 003. Phone: 0471- 2724740
Email: kerala.sbb@kerala.gov.in, Website: www.keralabiodiversity.org
Toll free No: 1800 425 5383

No 3656/ A13/2021/KSBB 03.12.2021

Dear DCs,

Sub: KSBB- Biodiversity studies of selected biodiversity rich areas- Reg
Ref: No 3656/ A13/2021/KSBB dated 16.11.2021

As per the reference cited certain areas has been selected for conducting Biodiversity monitoring studies (Annexure 1) and an amount of **Rs 25,000/- (Rupees Twenty Five Thousand Only)** site has been allotted. The entire program shall be planned and implemented towards fulfilling the objective of conservation based on scientific biodiversity assessment in participatory mode.

The amount can be utilized for honorarium to the experts, TA and food expenses of the participants, preparation of reports etc. The DCs can adopt the following methods for the studies based on the area and availability of personnel.

1. The study can be done with the help of TSG members/ nearby college teachers/ institutes etc
2. Nature camps/ River walk/ Butterfly survey/ Bird watching etc with the involvement of Biodiversity clubs/ students/ college students
3. With the help of Citizen scientists

Wide publicity shall be given to the programs in the District and involvement of BMC and other stakeholders shall be ensured. It shall be noted that experts in the field of flora/ fauna/ ecology shall be included in the group as needed. A soft copy of the detailed report including methodology adopted, details of species, biodiversity indices including Simpon's Index and photographs shall be submitted to the Board. The amount shall be utilized during the current financial year (before March 2022) and Utilization Certificate along with a soft copy of the report submitted.

Yours faithfully

Dr.C.George Thomas
Chairman

		Kadinamkulam panchayath 5. Kondaketti Kunichi hills, Vellarada Panchayath 6. Karichal lake and mangrove area at Kottukal, Kanjiramkulam and Karumkulam Panchayaths	Lake Hills lake
2	Alappuzha	1. Perumbalam island (North east area of Alappuzha district) 2. Pallipuram Mangrove patch (Pallipuram- Thykkattussery-Arookuutty area)	Island Mangrove forest
3	Ernakulam	1. Ponnakudam Kavu,	Kavu

Kailasam, T.C. 4/1679 (1), No. 43, Belhaven Gardens, Kowdiar P.O.
Thiruvananthapuram - 695 003. Phone: 0471-2724740
E-mail: keralabiodiversity@gmail.com, Web: www.keralabiodiversity.org
Toll free No: 1800 425 5383

Proceedings of the Member Secretary, Kerala State Biodiversity Board
(Present: Dr.Santhoshkumar.A.V)

KSBB- Alappuzha District Level Technical Support Group 2022- Reconstituted - Orders issued

KERALA STATE BIODIVERSITY BOARD

No. Cover. AS/3909/2019/KSBB 14.12.2022

Ref: Minutes of the 56th Meeting of Kerala State Biodiversity Board

ORDER

Rule 20 (6) of the notification is that a Technical Support Group (TSG) comprising of experts in the field of biodiversity drawn from Government agencies, NGOs, academic field, community and individuals shall be established by the State Biodiversity Board. The expert group shall lend support to BMCs. District level Technical Support Group shall consist of experts from the field of Life Sciences, Environmental Sciences, Geology, Legal experts in the biodiversity areas and scholars of Ecology and Environment

Accordingly a district level Technical Support Group is reconstituted at all districts of the State to support the Biodiversity Management Committees in the Local Self Government bodies, for giving active support to the updation of People's Biodiversity Registers (PBR), preparation of e-PBR and biodiversity/environment related issues, identification of Biodiversity Heritage Sites (BHS),Local Biodiversity Heritage Sites (LBHS), strengthening of Biodiversity Management Committees (BMCs), implementing KSBB projects etc.. The list of Technical Support Group of Alappuzha consists of the following members:

PANEL OF MEMBERS FOR CONSTITUTING DISTRICT LEVEL TSG

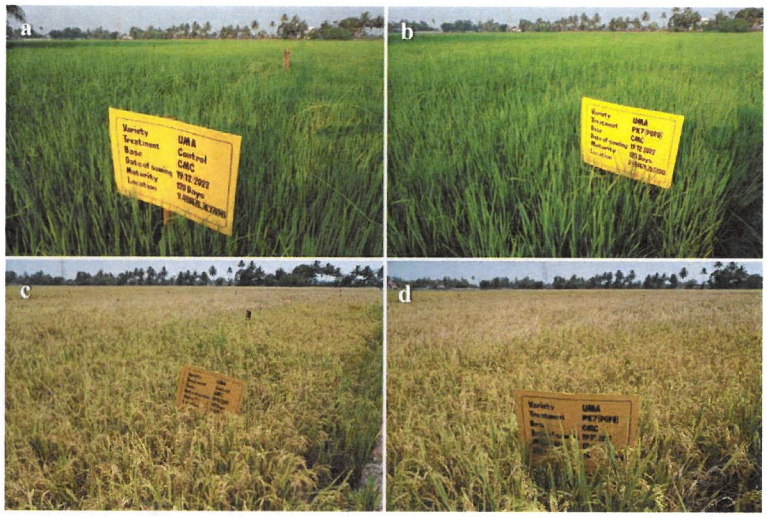
No	Name, Designation, Phone No, Email	Area of expertise
1	**Dr. Jose Mathew** Assistant Prof. in Botany SD College, Alappuzha Mobile: 9744702847 Email: polachirayan@yahoo.co.in	Taxonomy, Plant diversity,
2	**Sri. Sandeep Unnikrishnan** Block Project Coordinator in BRC Alappuzha (General Education Dept)	Environmentalist, Bird watcher, wild life photographer

9. From Lab to Field - Crop Development

Under the guidance of Prof (Dr.) Dileep.C, Department of Botany, Dr.Reshma has conducted research on advancements in crop development by harnessing Plant-Growth-Promoting Rhizobacteria (PGPR) from saline Pokkali rice fields and introducing them to acidic clay soils in the vulnerable Kuttanad region is proving transformative for agriculture.

Their findings, particularly with strain PK7, demonstrate substantial improvements in germination rates, growth vigor, and yield enhancement, showcasing potential increases of up to 252 kg/hec over control conditions. This research represents a pioneering effort in Kerala, highlighting the resilience of native PGPR in providing essential nutrients and mitigating salt stress under challenging agricultural conditions.

Aligned with sustainable development objectives, their research promotes the sustainable use of indigenous microbial resources to enhance soil health, reduce reliance on chemical inputs, and mitigate environmental impact. Through their exploration and application of native PGPR, this work is driving forward sustainable agriculture practices in the region.



Pantoea ananatis spotted in Kuttanad for first time

SAM PAUL A.
ALAPPUZHA

A bacterium of the genus *Pantoea ananatis* which may pose a threat to rice cultivation, has been discovered in the Kuttanad agro ecosystem for the first time.

According to researchers who made the discovery, the bacteria cause a disease that affects paddy ears with symptoms similar to bacterial leaf blight.

The study carried out by T.S. Reshma, a researcher at the Department of Postgraduate Studies and Research in Botany, SD College, Alappuzha; C. Dileep, associate professor at the college; and Smitha Balan, assistant director, Kerala Centre for Pest Management, was published in the Canadian Journal of Plant Pathology.


A rice plant infected by *Pantoea ananatis*.

Symptoms

According to the researchers, grain discolouration and leaf blight caused by *Pantoea ananatis* were first observed in rice plants in Kuttanad in July 2021.

The early symptoms included grain discolouration, stem lesions and leaf blight. Later mature seeds failed to develop, leaving only chaff. The leaves showed yellowish to brown lesions that turned a pale white to a straw colour as the disease progressed," reads the study.

Prior to the discovery of *Pantoea ananatis*, the only bacterial disease of rice reported from Kuttanad is bacterial blight caused by *Xanthomonas* spp. Though the ability of the new bacteria to spread disease is relatively less at present, the researchers warned that it might become a major threat to rice production worldwide and a better understanding of its pathogenicity is required.

Effective management

"To our knowledge, this is the first report of this pathogen from Kerala. The exceptional geography of Kuttanad necessitates an intense consideration for crop management and economic sustainability. Effective disease management, including chemical and biological controls, need to be developed for the prevention of disease transmission and crop loss," the researchers said.

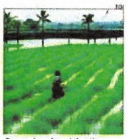
Grain discolouration and leaf blight caused by *Pantoea ananatis* have been reported in China, Russia and Korea.

Prior to its discovery from Kuttanad, the only case of *Pantoea ananatis* in India, where it was found to be responsible for causing leaf blight in rice plants in Kuttanad in July 2021.

Bacteria reduce salt stress in rice: Study

Sadha.Nambudiri
@timesgroup.com

Kochi: Pokkali farmers battling against salinity increase due to sea inundation now have a ray of hope as researchers at Sanatana Dharma (SD) College in Alappuzha have identified a new bacteria from the field that can promote plant growth in the event of higher salinity in the soil. There was also an increase in the yield.


Researchers found that the new bacteria can promote plant growth in salt-water conditions

The study isolated a gene from Pseudomonas species using a newly-designed primer and tested its effect on the plant growth parameters under saline stress and normal conditions. The plants yielded 252 kg/hectare more than untreated plants under controlled conditions.

"The field trial experiments were carried out at Pandarakalam, near Chempumpuram in Kuttanad. The rice variety included was Uma, which has a maturity of 120 days and the organism used was 'PK7'. The rice seeds were mixed with bacteria solution in the pre-sowing stage," said T S Reshma who completed the research as part of her doctoral work.

The seeds were surface sterilized and soaked in tap water for 24 hours. Then they were coated with bacterial suspension. After coating, seeds were mulched with leaves and a polythene cover to ensure the optimum temperature and humidity needed for germination. Mulching was removed after 12 hours, and the germinated seeds were used for sowing. The field was ploughed and prepared for sowing. The control and treated plots were separated using ridges. Pre-germinated seeds were sown, and growth parameters were measured in different time intervals. After the 110th day, the yield was harvested and compared statistically.

Salinity affects the quality and quantity of the yield by inducing osmotic stress. The study summarizes the successful implementation of plant growth promoting rhizobacteria (PGPR) from saline pokkali rice field to an acidic clay soil of Kuttanad region. The team found that the bacteria associated from a salt-tolerant paddy variety 'Pokkali' was applied for the growth improvement in salt susceptible variety Uma.

Rhizobacteria, especially salinity-tolerant PGPR have emerged in the last five decades as an organism of great importance that modulates the growth of plants by reducing different stress conditions, especially salt stress in the wake of saline intrusions in coastal places. Easy acclimatization and promising performance in field conditions ensure the added advantages of native PGPR.

Bacteria from Pokkali fields that could help rice plants thrive in the salt-water conditions in Kuttanad identified

Sam Paul A.
ALAPPUZHA

Researchers at Sanatana Dharma (SD) College, Alappuzha, have identified a new bacteria from Pokkali rice fields that could help rice plants thrive in the salt-water conditions in the Kuttanad region.

The study has found that the plants treated with Pseudomonas taiwanensis (PK7), growth-promoting rhizobacteria (ST-PGPRs), have yielded 252 kg/hectare (ha.) more than untreated plants under controlled conditions.

The study conducted by isolated from saline soils of the Pokkali rice field," say the researchers.

"The friendly bacteria containing ACC deaminase enzyme was used as a micronutrient. The study revealed that the bacteria make rice plants saline tolerant and significantly enhances germination, growth, and yield," they say.

Better yield

Under pot trial studies, salt stress was induced and after seven days, the salt injuries were analysed. The untreated plants developed salt responses, in-

nal, the *Journal of Agronomy and Crop Science*, published by Wiley.

"One of the biggest threats to paddy cultivation in Kuttanad, especially in the additional (second) crop season, is brackish water intrusion. Uma, the most common variety of rice cultivated in the region, is susceptible to salin-

unaffected and all the leaves were green, except the older ones. Besides, the treated plot produced an average of 7,595.7 kg/ha., whereas the control plot yielded 7,344.5 kg/ha. "This result indicates the efficacy of PK7 in generating the systemic response to salt stress," reads the study.

The field trials were conducted from December 2022 to April 2023 at Pandarakalam, near Chembumpuram, in Kuttanad. "The study summarises the successful implementation of PGPR from saline Pokkali rice field to an acid-

10. Fish Tank Management

The management of guppy ponds at the Department of Zoology is a cornerstone of our commitment to sustainable aquaculture practices and student education. Our approach includes maintaining robust breeding programs to support both research and educational objectives. We focus on cultivating healthy populations of guppies, ensuring they thrive in optimal conditions conducive to their growth and reproduction.

Regular monitoring and meticulous management of water quality parameters are essential to maintaining the health of our guppy populations. These efforts not only support academic research but also provide invaluable hands-on learning opportunities for our students. Through educational demonstrations, students gain practical insights into aquaculture principles and freshwater ecology, preparing them for careers in sustainable aquaculture and environmental conservation.

11. Student Projects about Mangrove Ecosystems and Organic Farming.

Student projects combining research with practical action testify to the success of sustainable practices at Sanatana Dharma College. Students gain hands-on experience while directly supporting mangrove ecosystems. It also helps the community understand the importance of conservation. Overall, the projects demonstrate how conservation efforts can protect plant species and ecosystems.

Conclusion

The diverse initiatives of Sanatana Dharma College promote environmental awareness, sustainability, and community engagement. Through activities like waste management, entrepreneurial recycling projects, sacred grove conservation and hands-on ecological research, the college cultivates a culture of responsibility. These efforts highlight the importance of integrating eco-sentitivity with modern practices, ensuring a sustainable future for both the campus and the broader community.