



UPDATES

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at Government College for Women, Vazhuthacaud, engaged 23 students as part of the Youth Campaign for a Plastic-Free Coastline. Facilitated by artist, designer, and art educator Dhanaraj Keezhara, the session explored visual storytelling and creative communication as tools for environmental awareness. Through their artwork, students reflected on the impacts of marine plastic pollution and contributed ideas for building greater public awareness around coastal conservation.



VOLUNTEERS CONTINUE COASTAL CLEANUP EFFORTS



As part of the Plastic Free Coastline initiative, Thanal organised a beach cleanup at Marianadu Beach on 16 May, bringing together staff members, student volunteers, and community participants.

The activity engaged 29 volunteers and resulted in the collection of approximately 150 kilograms of plastic and other waste materials from the shoreline. Following the cleanup, the waste was segregated and handed over to the Haritha Karma Sena of Kadinamkulam for



appropriate processing and management.

Beyond the collection of waste, the cleanup served as an opportunity to engage participants in conversations about marine pollution, waste management, and the importance of preventing plastic from entering coastal and marine ecosystems. Continued cleanup efforts such as these contribute to cleaner shorelines while encouraging long-term community stewardship of shared coastal spaces.

FARMERS ADAPT LOCAL SOLUTIONS IN THE FIELD



Farmer-led innovations continued to emerge from master farmers' fields under the Mannorukkam project, demonstrating how locally available resources can support sustainable agriculture.

At the farm of Moly Joy, natural field boundaries were established using arecanut leaf sheaths and coconut leaves. The bio-fence helps conserve moisture, reduce soil erosion, and gradually enrich the soil as the materials decompose. Arecanut fibres are also being used to support black pepper vines, providing an eco-friendly alternative to synthetic tying materials.

Meanwhile, Mary Mathai adopted a natural rooting technique using aloe vera stems to improve root development in hybrid plant cuttings. The method enhances root initiation and early plant establishment without the use of synthetic rooting hormones, improving survival rates and supporting healthy plant growth.

These farmer-led practices demonstrate practical, low-cost agroecological solutions that can be replicated across farming communities.

STRENGTHENING FARMER NETWORKS THROUGH PARTICIPATORY ORGANIC CERTIFICATION



Efforts continued during May to prepare master farmers and farmer groups under the Mannorukkam project for participation in the Participatory Guarantee System (PGS), a community-based organic certification process increasingly adopted by smallholder farmers in Wayanad.

Field visits assessed the adoption of organic and agroecological practices, while cluster meetings at Kolambatta and Kakkavayal introduced farmers to the principles and benefits of PGS. Discussions focused on sustainable farming practices, biodiversity conservation, peer learning, and market opportunities for organic produce.

The initiative is helping strengthen farmer networks while supporting the long-term transition towards agroecological farming in the region.

EXPANDING SKILLS AND LIVELIHOOD OPPORTUNITIES ACROSS HAMLETS

Training and capacity-building activities continued across hamlets under the Integrated Tribal Development Programme (ITDP), supporting sustainable livelihoods and community self-reliance.

Organic farming, composting, and food and nutrition sessions strengthened knowledge on ecological cultivation, waste management, and healthy dietary practices. Organic farming sessions, facilitated by Thanal's Agriculture Officer Aparna V. S., focused on coconut management and the effective use of organic inputs, while composting training introduced practical approaches for converting household organic waste into nutrient-rich manure.

Skill development programmes provided hands-on training in embroidery, ornament



making, candle production, incense stick making, and home hygiene products, creating opportunities for income generation through small-scale enterprises. Tailoring programmes continued to support women in developing practical stitching skills, while the formation of a tailoring unit at Villumala marked an important step towards community-based entrepreneurship and self-employment.

SUCCESS STORY

A HOME HYGIENE PRODUCTION UNIT TAKES SHAPE

A group of women from Kurubanmoozhy Hamlet in Pathanamthitta has transformed a training opportunity into a functioning community enterprise.

Following a training programme on the preparation of home hygiene products, ten beneficiaries came together to form a production unit with support from the Pamba Tribal Society. The group officially launched the unit in May and began producing lotion, dishwash liquid, fabric conditioner, and toilet cleaner.

Initial raw materials were supported through a loan from the society, enabling the unit to

produce its first batch of products. The group now expects to generate income through local sales while gradually repaying the initial investment.

The initiative reflects how targeted training, community support, and collective effort can create sustainable livelihood opportunities while strengthening women's economic participation.



NEWS, MEDIA AND ENGAGEMENT

GROWING YOUNG GARDENERS THROUGH HANDS-ON LEARNING



As part of Thanal's environmental education efforts, a two-day training programme was conducted for students attending the summer camp at Amrita Vidyalayam, Kaimanam. Thirty children participated in practical sessions on gardening, composting, organic farming, and natural pest management.

The programme encouraged children to develop an early understanding of food systems, soil health, and sustainable living through hands-on learning experiences.

RECOGNISING ACADEMIC EXCELLENCE

Muhammed Fahize, a member of the Carbon Neutral Meenangadi team, secured second rank in the M.Sc. Environmental Science and Technology programme (2023–2025) at the Central University of Punjab. He received the medal at the University's graduation ceremony in May, in the presence of the Chief Justice of India. The achievement reflects his academic commitment and continued engagement with environmental research and practice.



FROM THE FIELD

THE GOLDEN ARMOUR: INTEGRATING MARIGOLD FOR SOIL HEALTH AND PEST SUPPRESSION

By Sreelekshmi K. J

Do you know marigold is a silent warrior? Beyond its radiant, golden petals and its reputation as a pleasant garden bloom, the marigold (*Tagetes*) harbors a sophisticated biological defense system. While most admire it for its vibrant aesthetics, the marigold is a silent warrior creating an invisible chemical barrier that stretches from the depths of its roots to the tip of its blooms. This “extraordinary talent” transforms the plant into a “living bio-pesticide”, by effectively repelling pests and paralyzing destructive soil-borne nematodes, the marigold does more than just brighten a landscape, it acts as a sentinel of the ecosystem, standing tall as a true botanical power.

NEMATODE REPELLING PROPERTIES

Nematodes are basically roundworms which are difficult to see without a microscope and under a microscope they look like human hair follicles. Within the soil food web, they are diverse “picky eaters”—some consume

bacteria, protozoa, or algae. However, the most problematic varieties are the herbivorous nematodes (Jeff

2010). These pests latch onto a plant's root system, causing the formation of galls or “knots” that chew off nutrients and water, eventually strangling the plant's growth.

Against these invaders marigold acts as a nematicide.

It has a secret weapon hidden in its roots, i.e. Alpha-terthienyl which brings down the cellular structure of the nematodes. It is a sulfur-containing compound that is highly effective against root-knot nematodes. It acts as a phototoxin which gets

triggered by UV light and creates reactive oxygen species which leads to oxidative stress that breaks down the nematodes (J Bakker et al 1979). This “Invisible Barrier” compound is exuded into the rhizosphere creating a toxic zone for harmful microscopic worms while remaining safe for beneficial soil microbes. Crop rotation using marigold as cover crop is an effective method to control herbivores



nematodes.(Lopamudra Bakshi et.al 2022)

So the question may arise: will it not work in the dark? Is the soldier taking a nap at night?

While alpha-terthienyl is famous for being solar-powered for its phototoxic abilities, the marigold's true genius is its ability to weaponize this compound in the dark(Takahiro Hamaguchi et.al 2019). By creating internal enzymes which mimic the light and maintain a lethal chemical barrier around its roots at all hours.,hence marigold is a 24/7 working golden bloom.

TRAP CROP

While the root exudates acted as an underground defense against nematodes, the upper part of marigold acts as a medium to attract and trap the invaders i.e its a trap crop which are grown specifically fruit borers, whiteflies, and jassids from invading the main crops. Beyond the physical damage they inflict, these pests act as biological vectors, delivering devastating viral diseases and loss by transmitting leaf curl virus that can disrupt the yield. However, by strategically intercropping with marigolds from the very first day of the growth cycle, farmers can deploy a natural disruption tactic(MAYANK PARIHAR et. al 2025). This botanical intervention doesn't just manage pests; it shatters their life cycles by transforming a vulnerable monoculture into a well maintained intercropped unit which levels down the pest population.

This method of intercropping creates a shield : the marigold's volatile compounds, like limonene, repel invasive pests while simultaneously attracting the beneficial

insects needed to keep populations in check. Whether it is protecting tubers or fruit-bearing vegetables, the marigold stands as a proven, bio-based sentinel that secures crop yields while preserving the integrity of the organic farm ecosystem(Lopamudra Bakshi et.al 2022)

INTEGRATING MARIGOLD INTO SOIL

Studies show that integrating the entire marigold plant including roots into small pieces and burying them to the root zone of infected root disease affected plants have healed 1(Sulthan A Ismail et. al)

Marigold leaves(Tagetes erecta) have been used in traditional medicine as a natural insecticide, and there is some evidence to suggest that they can repel mosquitoes. The traditional usage involves preparing decoctions from their leaves, which are known for their antimalarial properties and febrifuge effects.

CONCLUSION

The marigold is far more than a beautiful garden flower; it is a biological asset that demolishes the destructive sprint of nematodes in the best way possible through the release of alpha-terthienyl and acting as a destroyer of pests, the marigold offers a holistic alternative to synthetic chemical interventions.

Its ability to function as a 24/7 "living bio-pesticide" ensures consistent protection for the rhizosphere. Furthermore, its dual utility as a trap crop and a traditional medicinal resource highlights the plant's versatility in promoting ecological balance. As we move toward more regenerative farming practices, integrating Tagetes species into crop rotations

and intercropping systems stands as a proven, cost-effective strategy to fortify soil health, secure crop yields, and protect the delicacy of our ecosystems.

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