

# **SOUVENIR & BOOK OF ABSTRACTS**

***National Conference on***  
Recycling and Earthworm-based Composting for  
Land Improvement and Agricultural Management (RECLAIM-2026)

Hybrid Mode  
**March 13, 2026**



\*Restore the soil \*Revive the land \*Reclaim the Future

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Thavalakuppam, Puducherry, India

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*Supported by*

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S.No	TABLE OF ABSTRACTS	P.No
A01-	Effect of Vermiwash Derived from Decomposed Leaf Litter on Germination, Growth, and Yield of Okra ( <i>Abelmoschus esculentus</i> L.)..... <b>Dr. C. Ganeche<sup>1</sup> and Dr. Mathimaran Natarajan *</b>	1
A02-	Vermibioconversion of Diwali Paper Waste Using Earthworms for Sustainable Waste Management..... <b>Dr. A. Thamizharasan<sup>1</sup> and Dr. S. Gajalakshmi*</b>	2
A03-	Physiological evaluation of Panchagavya foliar spray of Foxtail millet under <i>Rain-fed</i> ecosystem..... <b>K. Ananthi<sup>1*</sup>, S. Ganapathy<sup>1</sup>, M. Brindhavathy<sup>1</sup> V. Vijaya Geetha<sup>1</sup>, K. Sathya <sup>1</sup>and K. Sivagamy<sup>2</sup></b>	3
A04-	An Economic Analysis of Resource Use Efficiency and Input Use Behaviour of Gherkin Growers in Natham Block of Dindigul District, Tamil Nadu..... <b>Moushiga.V<sup>1*</sup> and Dr. V. Banumathy<sup>2</sup></b>	4
A05-	Goat Dung Vermicompost Enriched With Azolla in Integrated Farming System..... <b>G. Gayathry<sup>1*</sup> and K.Kalaichelvi<sup>2</sup></b>	5
A06-	Development of Biodegradable Pots Using Sugarcane Waste for Sustainable Farming..... <b>Anitha R<sup>*</sup>, Sugumaran MP<sup>2</sup>, Sassikumar D<sup>3</sup></b>	6
A07-	Climate Smart utilization of small millets for increasing the area and productivity under Rain-fed ecosystem..... <b>K. Ananthi<sup>1</sup>, S. Ganapathy<sup>1</sup>, M. Brindhavathy<sup>1</sup> V. Vijaya Geetha<sup>1</sup>, K. Sathya<sup>1</sup> and K. Sivagamy<sup>2</sup></b>	7
A08-	Natural Farming: Innovation in Modern Farming..... <b>Dr. Komal Singh Keram<sup>1</sup>, Dr. Birbal Sahu<sup>2</sup> and Dr. Rajashekhar Basanayak<sup>3</sup></b>	8
A09-	Integrated Nano-Phosphorus and Vermicompost for Enhancing Groundnut Productivity and Nutrient Content in Coastal Soils of Tamil Nadu..... <b>Kamalakkannan P<sup>1a</sup>, Sureka K<sup>1b*</sup>, VijaiSelvaraj K S<sup>2</sup>, Lenin A R<sup>3</sup> and Arivukkarasu K<sup>4</sup></b>	9
A10-	Kitchen wastewater treatment employing <i>Eudrilus eugeniae</i> based vermifiltration system.... <b>R. Subashini<sup>1</sup>, and S. Gajalakshmi*</b>	10
A11-	Vermicompost-Induced Changes in Soil Enzyme Activity and Nutrient Use Efficiency in Agricultural Soils..... <b>Dr. C. Sivaranjani* and Dr. M.Asokhan</b>	11
A12-	Effect of Soil Moisture Distribution of HDPS Cotton under Deficit Subsurface Drip Irrigated Condition..... <b>Manibharathi S<sup>1*</sup>, Somasundaram S<sup>2</sup>, Subramanian A<sup>3</sup>, Ravichandran V<sup>4</sup> and Manikanda Boopathi N<sup>5</sup></b>	12

## Effect of Soil Moisture Distribution of HDPS Cotton under Deficit Subsurface Drip Irrigated Condition

**Manibharathi S<sup>1\*</sup>, Somasundaram S<sup>2</sup>, Subramanian A<sup>3</sup>, Ravichandran V<sup>4</sup> and Manikanda Boopathi N<sup>5</sup>**

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Cotton (*Gossypium* spp.) is an economically important fibre crop. In India, cotton is cultivated in about 129 lakh hectares with a total production of 336 lakh bales and an average productivity of 443 kg ha<sup>-1</sup>. In recent years, the High-Density Planting System has emerged as a promising technology for enhancing cotton productivity. Efficient irrigation management is crucial for sustaining yield under limited water availability. A field experiment was conducted during the summer and winter seasons of 2024-25 at the Wetland Farm, Department of Agronomy, Tamil Nadu Agricultural University, and Coimbatore, to study soil moisture dynamics in HDPS cotton under subsurface drip irrigation. The experiment was laid out in a split-split plot design with three irrigation levels in the main plots (1.0, 0.8 and 0.6 ETc), two cotton varieties in the sub-plots (CO 17 and VPT 2) and three nitrogen management strategies in the sub-sub plots (control, 100% RDN through granular urea, and 50% RDN through granular urea + nano urea applied in three splits at 25, 45 and 65 DAS), each replicated thrice. Soil moisture distribution was assessed at 0-10 cm and 10-20 cm depths during the vegetative stage in both seasons. Results revealed that soil moisture content was higher under 1.0 ETc irrigation compared to 0.8 and 0.6 ETc levels. Across irrigation treatments, soil moisture was highest near the drip line at the centre of the bed and gradually decreased towards the periphery of the wetting front. Vertically, the 10-20 cm depth consistently recorded higher soil moisture content than the 0-10 cm depth, irrespective of irrigation regimes. These findings highlight the potential of subsurface drip irrigation for efficient soil moisture management and sustainable cotton production under water-limited conditions.

**Key words:** *Sub-Surface Drip Irrigation, Soil Moisture Distribution, HDPS and Seed Cotton Yield.*



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### Thanks Note

The Organizing Committee of **RECLAIM-2026** expresses its heartfelt thanks to our **Chief Guest, resource persons, speakers, participants, students, and farmers** for their valuable presence and support.

We sincerely thank all the **organizing committee members, coordinators, volunteers, and staff** for their dedication and hard work.

With sincere gratitude,  
Organizing Committee,  
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