

AAVISHKAR

Academic Year – 2025-2026



Aavishkar
Inter-Collegiate/ Institute/Department Research Convention

Category – 06 Medicines and Pharmacy
Level 1 – Undergraduate Students (UG)

Slot No: _____

Title : Study on the formulation and evaluation of a Natural, Eco-Friendly Bio-pesticide.

Abstract: Growing environmental awareness has increased interest in natural pesticide alternatives. This study developed a plant-based dry powdered pesticide using onion peel, tuls, turmeric, garlic, neem, mint and lemon rind. The formulation was tested for moisture content, particle size, pH, and storage stability. Laboratory and small field trials showed effective pest control compared with a synthetic pesticide, with no harm to crops, soil, or beneficial insects, indicating its potential as a sustainable and affordable solution.

Turmeric **Lemon Peel** **Garlic**
Onion Peel **Mint Leaves** **Neem Leaves** **Tuli Leaves**

Objective:
To create awareness on the below points

1. To develop a natural biopesticide suitable for kitchen use, plants, and household furniture.
2. To test its effectiveness against common household pests.
3. To compare the performance of chemical pesticides V/S the formulated natural biopesticide.
4. To assess the shelf life, stability, and ease of application of the product.
5. To promote an eco-friendly approach that supports environmental protection.

Methodology:

1. Sterilize the all ingredient and glass ware.
2. Onion peels - 25 gm, Neem Powder - 25 gm, Garlic - 15 gm, Tuli Leaves - 10 gm, Mint leaves - 10 gm, Lemon peel - 10 gm, Turmeric - 05 gm
3. Grind into fine powder for easier extraction and mixing.
4. Mix ingredients in the following proportion (100 gram formula).
5. Mix 10-15 grams of powder in 1 litre warm water.
6. Wait 10 minutes, strain, and pour into spray bottle.
7. The remaining powder should be stored in a Air-tight container in a cool, dark place.

Disadvantages of chemical insects repellent.

1. Soil Degradation
2. Environmental Contamination
3. Insecticides will kill more than the intended organisms.

Applications:

1. Kitchen and Indoor Furniture.
2. Gardens and Potted Plants.
3. Small Farms.
4. Organic Farming.

References :

1. NCBI – Natural Pesticides Overview <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9021022/>
2. ResearchGate – Plant Based Biopesticides <https://www.researchgate.net/publication/342030113>
3. Plant Based Biopesticides
3. FAO – Guidelines on Biopesticides <https://www.fao.org/3/i9186en/i9186en.pdf>



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20th
Aavishkar

Inter-Collegiate / Institute / Department Research Convention
(Zonal Round)
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Certificate of Participation

This is to Certify that Ms. Tervankar Siddhi Sunil of South Indian Children Education Society Arts, Science and Commerce College, Ambernath has participated and presented a Research Project titled Study on the formulation and evaluation of a Natural, Eco - Friendly Bio-pesticide. in Medicine and Pharmacy Category and UG Level at 20th Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) organized by the University of Mumbai at B.K. Birla College of Arts, Science and Commerce, Kalyan (Autonomous) on December 1, 2025 for Zone V (Thane East).

Dr. Minakshi Gurav
OSD,
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Dr. Sunil Patil
Director,
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University of Mumbai

December 1, 2025
Kalyan





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Certificate of Participation

This is to Certify that **Ms. Mane Shravani Sandeep** of **South Indian Children Education Society Arts, Science and Commerce College, Ambernath** has participated and presented a Research Project titled **Study on the formulation and evaluation of a Natural, Eco - Friendly Bio-pesticide**, in **Medicine and Pharmacy Category** and **UG Level** at **20th Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round)** organized by the University of Mumbai at **B.K. Birla College of Arts, Science and Commerce, Kalyan (Autonomous)** on **December 1, 2025** for **Zone V (Thane East)**.

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This is to Certify that **Ms. Chavan Vishakha Vinayak** of **South Indian Children Education Society Arts, Science and Commerce College, Ambernath** has participated and presented a Research Project titled **Study on the formulation and evaluation of a Natural, Eco - Friendly Bio-pesticide**, in **Medicine and Pharmacy Category** and **UG Level** at 20th Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) organized by the University of Mumbai at **B.K. Birla College of Arts, Science and Commerce, Kalyan (Autonomous)** on **December 1, 2025** for **Zone V (Thane East)**.

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This is to Certify that **Ms. Kamble Tanishka Sandesh** of **South Indian Children Education Society Arts, Science and Commerce College, Ambernath** has participated and presented a Research Project titled **Study on the formulation and evaluation of a Natural, Eco - Friendly Bio-pesticide**, in **Medicine and Pharmacy Category** and **UG Level** at **20th Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round)** organized by the University of Mumbai at **B.K. Birla College of Arts, Science and Commerce, Kalyan (Autonomous)** on **December 1, 2025** for **Zone V (Thane East)**.

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This is to Certify that Ms. **Barve Trushna Sanjay** of **South Indian Children Education Society Arts, Science and Commerce College, Ambernath** has participated and presented a Research Project titled **Study on the formulation and evaluation of a Natural, Eco - Friendly Bio-pesticide**, in **Medicine and Pharmacy Category** and **UG Level** at 20th Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) organized by the University of Mumbai at **B.K. Birla College of Arts, Science and Commerce, Kalyan (Autonomous)** on **December 1, 2025** for **Zone V (Thane East)**.

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This is to Certify that **Dr. Alpa Patel** of **South Indian Children Education Society Arts, Science and Commerce College, Ambernath** has guided a Research Project titled **Study on the formulation and evaluation of a Natural, Eco - Friendly Bio-pesticide**. which was presented by her student **Ms. Tervankar Siddhi** in **Medicine and Pharmacy** Category and **UG** Level at 20th Aavishkar: Inter-Collegiate / Institute / Department Research Convention (Zonal Round) organized by the University of Mumbai at B.K. Birla College of Arts, Science and Commerce, Kalyan (Autonomous) on December 1, 2025 for **Zone V (Thane East)**.

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