

Training Module on *Handmade Agarbatti and Dhoopbatti*



नमामि
गंगे



भारतीय वन्यजीव संस्थान
Wildlife Institute of India



JALAJ-WII, NMCG INITIATIVE:

The Ministry of Jal Shakti, Government of India, working through the National Mission for Clean Ganga (NMCG), has commissioned the Wildlife Institute of India (WII) to oversee a project titled "Biodiversity Conservation and Ganga Rejuvenation." This project aims to develop a science-based plan for restoring aquatic species in the Ganga River, with the involvement of various stakeholders. It successfully combines efforts to improve livelihoods and skills while aligning with Ganga conservation goals, utilizing both traditional livelihood centers and the innovative mobile unit called "Jalaj." This unique business model has gained recognition and adoption by district and state administrations across the states along the Ganga River. The primary aim of this initiative is to connect local livelihoods with conservation efforts through comprehensive training and the establishment of livelihood centers. These initiatives are seen as potential models for the broader "Arth Ganga" program, embodying the vision of sustainable economic development along the Ganga River basin. Thus, these efforts realize the Arth Ganga vision by fostering a symbiotic relationship between the river and its communities, as exemplified by the innovative "Jalaj" approach.

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PREFACE:

The Ganga River, a cradle of spirituality and life, faces unprecedented threats from pollution and climate change. Recognizing the urgency of these challenges, this module will guide you to craft Incense sticks and use of flowers and other natural ingredients that seamlessly blend traditional craftsmanship with modern sustainability practices.

Incense sticks hold profound significance in both our daily lives and cultural practices. Beyond their aromatic allure, these sticks play a multifaceted role in enhancing our spiritual experiences, meditation sessions, and even in purifying our living spaces. In many cultures, including Hinduism, Buddhism, and others, incense burning is a ritualistic tradition deeply embedded in religious ceremonies, prayers, and meditation practices.

The fragrance emitted by incense not only stimulates the senses but also serves as a conduit for invoking a sense of tranquility and spiritual connection. Moreover, incense sticks have been believed to possess purifying properties, cleansing the atmosphere and creating a serene ambiance. Their presence in homes, temples, and sacred spaces symbolizes a reverence for tradition, spirituality, and the pursuit of inner peace. Overall, incense sticks serve as a timeless bridge between the physical and spiritual realms, enriching our lives with their fragrant essence and profound cultural, significance.

MODULE 1: INTRODUCTION OF HANDMADE INCENSE STICKS

The handmade incense sticks, known as Agarbattis and Dhoopbattis, produced under the Jalaj project represent a unique blend of tradition, environmental stewardship, and socio-economic upliftment. These incense sticks are crafted using entirely natural ingredients, a conscious choice that promotes human health, maintains environmental cleanliness, and contributes to the conservation of the Ganga river basin. The initiative is concentrated in the Jalaj Kasturi region of Kannauj, situated in the states of Uttar Pradesh and Haryana, where river dwellers are directly involved in the production process. The natural ingredients used in making these incense sticks include flowers commonly offered in temples, alongside other readily available natural materials. By utilizing these materials, the Jalaj project not only ensures the production of high-quality incense with exquisite fragrances but also repurposes organic waste that might otherwise contribute to environmental degradation. This practice exemplifies sustainable craftsmanship, as it reduces waste and minimizes the environmental footprint associated with incense production.

At the heart of the Jalaj project is the empowerment of Ganga river dwellers. By engaging in the creation of handmade incense sticks, these communities gain access to sustainable livelihoods, offering them a reliable source of income. This economic empowerment is particularly significant in regions where traditional employment opportunities may be limited. By fostering an environment of economic self-sufficiency, the project helps uplift these communities, contributing to their overall well-being and resilience.

Moreover, the Jalaj project underscores the importance of traditional craftsmanship. The art of making incense sticks by hand is a time-honored practice that has been passed down through generations. By embracing and promoting this traditional skill, the project not only preserves cultural heritage but also ensures that the production process remains environmentally friendly. The use of natural ingredients and traditional methods results in incense sticks that are free from harmful chemicals, providing a healthier alternative for consumers and reducing pollution. This initiative also highlights the intrinsic connection between humanity and nature.

The use of natural ingredients for incense sticks signifies a deep respect for the environment and a commitment to sustainable living. Each fragrant wisp of smoke from these incense sticks tells a story of resilience, community empowerment, and environmental preservation. It serves as a reminder of the impact of conscious consumption and the benefits

of initiatives rooted in reverence for the natural world. The Jalaj project, through its dedication to natural ingredients and traditional methods, showcases the transformative power of sustainable practices. It demonstrates how conscious efforts can lead to positive environmental outcomes while simultaneously fostering economic and social development. In this way, the project not only produces captivating fragrances but also weaves a narrative of harmony between humanity and nature, exemplifying the profound impact of such harmonious initiatives.

MODULE 2: The Segregation Process of Offered Flowers, Leaves, and Stems to the temples.

Using offering flowers, leaves, and stems to create incense sticks is a sustainable practice that not only reduces waste but also transforms organic materials into a product of spiritual and aromatic value. Here's a detailed explanation of the segregation process involved in making incense sticks from these natural offerings:

1. Collection and Sorting

Collection: The first step involves collecting the offering flowers, leaves, and stems from temples, homes, and other places of worship. These offerings are typically gathered from collection bins placed at these sites.

Initial Sorting: Upon collection, the materials are brought to a processing facility where they are sorted. Any non-organic materials such as plastic, metal, or paper are removed at this stage.



Figure 1: Collecting used flower from temples

2. Detailed Segregation

Separation by Type: The sorted organic materials are further segregated based on their type—flowers, leaves, and stems. This is important because different parts of the plants have different properties and compositions, affecting the final product’s quality and fragrance.

Removal of Impurities: Any remaining impurities like threads, rubber bands, or residual non-organic items are meticulously removed by hand or using sieves.



Figure 2: Washing and cleaning the flowers

3. Cleaning and Drying

Washing: The segregated organic materials are thoroughly washed to remove dust, dirt, and any residual chemicals (such as pesticides) that may be present. This ensures that the final incense sticks are pure and safe to use.

Drying: After washing, the materials are spread out in a clean, well-ventilated area to dry. Sun drying is often preferred for its natural and cost-effective approach, but mechanical drying methods can be used in regions with less sunlight or during the rainy season.



Figure 3: Drying the flowers

4. Grinding and Blending

Grinding: Once dried, the flowers, leaves, and stems are ground into a fine powder. This can be done using traditional stone grinders or modern mechanical grinders, depending on the scale of production.

Blending: The powdered materials are then blended in specific proportions to create a consistent base for the incense. The blend may vary depending on the desired fragrance and the properties of the raw materials. Often, additional natural aromatic substances such as essential oils, resins, or wood powders (like sandalwood) are added to enhance the fragrance and burning properties.

MODULE 3: PROCEDURE FOR MAKING HANDMADE INCENSE STICKS

In the procedure of making incense sticks, a meticulous blend of various natural elements is combined to achieve both a pleasing aroma and efficient burning characteristics. The process involves the careful proportioning and blending of several key components:

Step 1: Prepare the Base Ingredients

- (a) **Wood Powder:** Start by selecting the wood powder. Commonly include sandalwood or other fragrant woods. These provide structure and substance to the incense mixture and establish a serene environment. Measure out the required amount, typically in a 2:2 ratio with other base ingredients.
- (b) **Cow Dung:** After collecting cow dung, preferably from desi cows, known for its auspicious properties. It helps in texture and combustion. Measure it in the same proportion as the wood powder.

Step 2: Add Fragrance and Aromatic Enhancements

- (a) **Sandalwood Powder:** Sandalwood powder is added to the mix for its distinctive soothing and calming aroma. This also follows the 2:2 ratio.
- (b) **Dried Flower Powder:** Incorporate dried flower powder made from flowers collected from sacred sites. This powder enhances the aromatic profile of the incense.

Step 3: Integrate Traditional Elements

- (a) **Hawan Samagri:** A blend of hawan samagri is added, a mixture of various herbs and botanicals used in Hindu rituals. This adds cultural significance and complexity to the incense.

Step 4: To Ensure Cohesion and Consistency

- (a) **Jigat Powder:** To bind the ingredients together, jigat powder is added known for its strong adhesive properties. This ensures that the mixture maintains its shape and burns evenly.

Step 5: Enhance Burning Properties

(a) **Di-Propylene Glycol (DPG):** Mix in DPG oil to improve the burning properties of the incense. It acts as a solvent, allowing for a controlled release of scent and reducing black smoke emission.

Step 6: Infuse with Fragrance

(a) **Fragrance Oil:** After selecting a fragrance oil such as sandalwood, jasmine, or lavender, it is added to the mixture to enrich the aroma, making the incense more appealing and long-lasting.

Step 7: Ensure Consistent Burning

(a) **Charcoal Powder:** Add charcoal powder to facilitate consistent burning. It helps in maintaining a steady and slow burn, releasing the fragrance gradually.

Step 8: Refine the Texture

(a) **Honey, Camphor, and Ghee:** Incorporate honey, camphor, and ghee to smooth and refine the texture of the mixture. These ingredients also add symbolic and aromatic properties to the incense.

Step 9: Bind the Mixture

(a) **Water:** Gradually add water to the blend to fully integrate and bind all the ingredients together. The amount of water should be enough to form a cohesive mixture that can be molded.

Step 10: Form the Incense Sticks

(a) Molding and Shaping:

a. Roll the prepared mixture onto bamboo sticks or shape them into dhoopbatti (cone shapes). Ensure that the sticks or cones are uniform in shape and size to guarantee even burning.

Step 11: Drying

- a. Place the shaped incense sticks or cones in a well-ventilated area to dry.
- b. Allow them to dry completely, which can take several days depending on the climate and humidity.

Step 12: Packaging

a. Packaging:

- b. Once the incense sticks or cones are fully dried, package them in airtight containers or wrapping to preserve their fragrance.
- c. Label the packages with the type of incense and its intended use, if desired.



Figure 4: Mixture is ready for making incense sticks.

MODULE 4: Technique used in making handmade incense stick

- **Hand Roll Technique for Agarbatti:**

- Prepare the incense mixture and the bamboo sticks.
- Take a small amount of the mixture and start rolling it onto the stick from one end to the other.
- Ensure even coating by gently pressing and rolling the mixture.
- Avoid direct contact with the rolled part of the Agarbatti to prevent deformities..



Figure 5: Demonstration Hand Roll Technique for Agarbatti

Mold Technique for Dhoopbatti:

- Prepare the incense mixture and fill the molds with it.
- Press the mixture firmly into the molds to ensure they take the conical shape.
- Carefully remove the formed cones from the molds without applying too much pressure.
- If molding by hand, shape the mixture into cones manually with delicate handling.



Figure 6: Demonstration of making Dhoopbatti form Mold Technique

Drying Process of natural incense sticks:

- After shaping, the prepared incense cones or sticks are laid out on sheets and placed in the sun for drying. This sun-drying process typically takes around three days.
- The duration of the drying process can vary depending on the weather. In rainy seasons and winters, it may take longer for the incense cones to dry fully.
- It is essential for the incense cones to be completely dry before packaging to prevent moisture retention, which can lead to fungal growth and render them unsuitable for use.
- Once fully dried, after approximately three days under favorable weather conditions, the incense cones (Dhoopbatti) are ready for packaging and subsequent use.



Figure 7: Sun drying process of Dhoopbatti and Agarbatti

MODULE 5: Packaging Process of handmade incense sticks:

Packaging of handmade incense sticks.

1. **Specified Quantity Packaging:** Each pack of handmade incense sticks, whether Dhoopbatti or Agarbatti, is packaged with a specified quantity. The exact number of sticks is clearly mentioned on the back of the packaging, ensuring transparency and consistency for the customers.



Figure 8: Packaging of Dhoopbatti and Agarbatti

2. Careful Handling to Prevent Breakage: Even after the drying process, incense sticks remain delicate and can easily break. Therefore, special care is taken during the packaging process to ensure they are not damaged. This careful handling helps maintain the quality and integrity of the product.

3. Protective and Eco-Friendly Packaging: The incense sticks crafted by Ganga Praharis are carefully packed in cloth bags. These cloth bags provide an extra layer of protection and preservation for the incense sticks. Subsequently, these bags are placed into eco-friendly packaging, underscoring our commitment to environmental sustainability throughout the packaging process.

4. Environmental and Community Focus: During the crafting of handmade incense sticks by Ganga Praharis, meticulous attention is paid to ensuring zero harm to the environment. Our project not only focuses on environmental sustainability but also aims to foster a connection between people and the river. By doing so, it enables the community to secure livelihood resources while actively promoting conservation efforts.

5. Ready for Sale: After the careful and sustainable packaging process, the handmade incense sticks created by our Ganga Praharis are ready for sale. This final step ensures that the product reaches the market in pristine condition, reflecting the dedication and care involved in its creation and packaging.

MODULE 6: SAFETY MEASURES:

Safety Measures for Making Handmade Incense Sticks

When making handmade incense sticks, it is crucial to follow certain safety measures to ensure a safe and hygienic working environment. Here are detailed guidelines for each safety measure:

- **Maintain Clean Hands:**

Importance: Maintaining clean hands is essential to prevent contamination of the ingredients used in making incense sticks. Contaminated hands can introduce dirt, bacteria, or other impurities into the mixture, compromising the quality of the final product.

Procedure: Before beginning the process, thoroughly wash your hands with soap and water. Use hand sanitizer if necessary. Ensure nails are clean and avoid wearing jewelry that can harbor dirt or bacteria.

- **Ensure Proper Ventilation:**

Importance: Working in a well-ventilated area is crucial to minimize inhalation of dust particles and fumes that can arise from the ingredients. Poor ventilation can lead to respiratory issues and discomfort.

Procedure: Set up your workspace in a well-ventilated area, preferably with windows open or with an exhaust fan running. Consider using an air purifier with a HEPA filter to capture fine particles. If ventilation is inadequate, wear a dust mask to protect your lungs.

- **Use Clean Tools and Equipment:**

Importance: Using clean and sanitized tools and equipment prevents contamination and ensures the purity and quality of the incense sticks.

Procedure: Regularly clean all tools and equipment before and after use. Use a mild detergent and water for washing, and ensure tools are completely dry before use. Sanitize equipment with an alcohol-based solution if necessary.

- **Store Chemicals and Fragrances Properly:**

Importance: Proper storage of chemicals and fragrance oils prevents chemical degradation, accidental spills, and harmful reactions.

Procedure: Store all chemicals and fragrance oils in sealed, clearly labeled containers. Keep these containers in a cool, dry place away from direct sunlight. Ensure the storage area is well-ventilated and out of reach of children and pets.

- **Maintain a Clean and Organized Work Area:**

Importance: A clean and organized workspace minimizes the risk of accidents such as slips, trips, and falls, and promotes a safe working environment.

Procedure: Regularly clean the workspace, removing any spills or debris immediately. Keep tools and ingredients neatly organized and stored. Use storage bins and shelves to keep the area tidy.

- **Handle Hot Materials with Caution:**

Importance: Hot materials such as melted ghee or charcoal powder can cause burns and other heat-related injuries if not handled properly.

Procedure: Use heat-resistant gloves when handling hot materials. Keep hot substances away from flammable items and work on a heat-resistant surface. Be mindful of your movements to avoid accidental contact with hot materials.

- **Follow Fire Safety Protocols:**

Importance: Incense making often involves flammable materials like charcoal powder and fragrance oils, posing a fire hazard.

Procedure: Keep a fire extinguisher nearby and ensure you know how to use it. Avoid open flames and sparks in the workspace. Follow all fire safety guidelines, such as having a smoke detector installed and keeping flammable materials properly stored.

- **Avoid Ingestion of Ingredients:**

Importance: Many ingredients used in incense making can be harmful if ingested, leading to poisoning or other health issues.

Procedure: Do not eat or drink in the workspace. Clearly label all materials and store them away from food and beverages. Wash your hands thoroughly before eating or drinking after working with incense ingredients.

- **Restrict Access to Work Area:**

Importance: Restricting access to the workspace prevents accidents and exposure to harmful substances, especially for children and pets.

Procedure: Use barriers or signage to indicate that the area is restricted. Ensure the workspace is secured and inaccessible to unauthorized individuals. Educate family members about the potential hazards.

- **Keep a First Aid Kit Accessible:**

Importance: Having a well-stocked first aid kit available allows you to address minor injuries promptly and effectively.

Procedure: Ensure the first aid kit is easily accessible and contains essentials like bandages, antiseptic wipes, burn ointment, and sterile gloves. Regularly check and replenish the kit as needed. In case of serious injuries, seek professional medical attention immediately.

MODULE 7: The Jalaj Project: Integrating Sustainability with Tradition in Incense Stick Production

The Jalaj project embodies a holistic approach to sustainability, intertwining traditional wisdom with modern eco-conscious practices. By reviving the age-old tradition of incense stick making, Jalaj not only preserves cultural heritage but also champions environmental responsibility.

At the heart of Jalaj are the communities deeply rooted in their cultural traditions. By engaging them in the process of gathering raw materials from spiritual areas, Jalaj fosters a sense of connection to the land and its sacred significance. This harmonious relationship with nature underpins every step of the production process.

The careful selection and preparation of materials reflect Jalaj's commitment to purity and sustainability. Flowers, leaves, and plant stems are collected with reverence, honoring their natural essence. Through meticulous drying and grinding, these botanical treasures are transformed into fragrant powders, preserving their aromatic richness.

Sandalwood powder, a timeless favorite renowned for its soothing aroma, is incorporated into the blend, imparting a sense of tranquility to each incense stick. The addition of natural oils and water further enhances the sensory experience, infusing the air with subtle hints of botanical bliss.

Crucially, Jalaj eschews bamboo sticks, recognizing their inherent drawbacks. Bamboo's high moisture content compromises the integrity of the incense, leading to uneven burning and the release of undesirable odors and pollutants. Instead, Jalaj opts for materials carefully chosen for their suitability to burning, such as fragrant woods, resins, and other natural plant-based ingredients.

This conscientious approach not only ensures a cleaner and more enjoyable burning experience but also aligns with Jalaj's broader mission of environmental stewardship. By promoting sustainable alternatives to conventional practices, Jalaj sets a precedent for eco-friendly innovation in the incense industry.

Through its endeavors, Jalaj not only preserves cultural heritage but also paves the way for a more sustainable future. By harnessing the power of tradition and community, Jalaj spreads

the message of sustainability far and wide, inspiring others to tread lightly upon the earth while honoring the wisdom of generations past.

MODULE 8: LINKING LIVELIHOODS WITH CONSERVATION:

Linking livelihoods with conservation is not just essential but imperative for ensuring a sustainable future for both people and the environment, particularly in the context of the Ganga River. This revered river sustains the livelihoods of millions across various sectors, including agriculture, fishing, and tourism. However, the very activities that provide sustenance often pose significant threats to the health of the Ganga and its diverse ecosystems. To safeguard the river's well-being and preserve its rich biodiversity, it becomes paramount to promote eco-friendly livelihood options. Initiatives such as Jalaj exemplify this approach by implementing practices like organic farming, sustainable fishing methods, and responsible tourism. These practices offer economic opportunities while concurrently ensuring the river's protection. Organic farming reduces the reliance on chemical fertilizers and pesticides, minimizing agricultural runoff that can pollute the river. Sustainable fishing methods help maintain fish populations and aquatic health, avoiding overfishing and habitat destruction. Responsible tourism encourages visitors to appreciate the river's natural beauty without causing environmental degradation, promoting activities that have minimal ecological impact. Moreover, fostering awareness and actively engaging local communities in conservation endeavors are integral steps toward cultivating a sense of ownership and collective commitment to preserving the Ganga River's ecological integrity. Educational programs, community-led monitoring, and participatory decision-making processes empower local residents to become stewards of their environment. By integrating traditional knowledge with modern conservation techniques, communities can develop sustainable practices that honor cultural heritage while addressing contemporary environmental challenges. Through such concerted efforts, a harmonious coexistence between humanity and nature can be achieved, where the vitality of the Ganga River and the prosperity of its inhabitants are mutually upheld for generations to come. By aligning economic development with environmental stewardship, the region can create a resilient socio-ecological system that supports both human well-being and a sustainable world.



National Mission for Clean Ganga (NMCG)

Ministry of Water Resource, River Development & Ganga Rejuvenation



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