

Preparation of Incense Stick using Marigold floral waste from Nasik region

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Abstract:

In India, every year 8 tons of floral waste is disposed to rivers and water bodies, polluting them to huge amount. If this floral waste is used technically, the amount of waste can be reduced to a huge content. These flowers can be widely used in preparation of cosmetics and value added products. This study identifies the use of marigold waste to prepare incense sticks. In Nasik Maharashtra ample amount of marigold is available during festivals. In navratri marigold flowers are used to offer deities which is wasted afterwards and thrown in rivers. A small attempt is made here to reduce this waste and convert it into useful, aesthetic and value added product. The dried marigold petals were used to prepare incense stick. The product prepared can be commercialized to promote daily wages earning to needy people.

Keywords: incense stick, crushed marigold and floral waste.

INTRODUCTION:

Lighting incense sticks, agarbattis and dhoop is a common practice in most Indian households. Incense is used widely in many religious practices to deepen attention, heighten senses and uplift ones own spirit when practicing meditation. Every time an incense stick is lighted, it fills the air around with a distinct aroma. As per studies the essential oils present in the incense is said to help clear nasal blockages and improve the air around you, replicating the benefits of aromatherapy. Hence, it is particularly kept and used often in alternate healing centers. There are also some health benefits of lighting incense sticks in and around your home.

Marigold was used in the product as it was available in ample amount in Nasik during navratri and so wasted in huge quantity in the same period. These waste marigold flowers were collected daily during navratri festival from different temples of Nasik like Kalika devi temple, Khandvyavarchi devi temple, etc. Daily near about one ton of flowers were collected and they were segregated and processed further for use in incense stick.

The marigold here belongs to family Asteraceae. Calendula is a species of annual and perennial herbaceous plants. The scientific name is calendula officinalis.

The petals, pollen, and stems are rich in triterpenoid esters (an anti-inflammatory), antioxidants, and carotenoids, giving the flower a wide array of functions. As of today, marigold products are used as a bactericide, antiseptic, antiviral, and anti-inflammatory to treat various skin disorders and pain.

Indian culture recognises agarbatti with lots of importance. All religions within India use incense to help with their worship. The natural aromas of the incense can help improve the mood and help your mind to focus. It has particular importance within Hinduism.

In all Hindu rituals, agarbatti are an integral part. The aromas of the incense sticks are considered to have healing powers that are naturally soothing and calming. Once the calming effect takes place, there is heightened concentration. However, agarbatti that is made from bamboo is not allowed within rituals as bamboo is banned from being burnt in Hinduism.

The ritual or burning incense is incredibly symbolic in Hinduism. Incense sticks burn completely into ashes yet their impact is the pleasant aromas that fill a room. This ritual represents the human sacrifice to society. Beyond this, agarbatti is used day to day as air fresheners.

Incense has now become an aroma that is synonymous with Indian culture. The brightly coloured sticks and infatuating scents can be found all over the country, from temples to households.

MATERIALS AND METHODS:

Collection and segregation of flowers:

The flowers collected from different temples of Nasik during Navratri were segregated according to their colour and size. The flowers were then converted into petals and remaining flower material was discarded. The petals were weighed accurately. These petals were then allowed to dry at room temperature till they became completely dry. They are then crushed.





This crushed marigold petals are ready to use in incense sticks. These crushed flowers contain carbon elements which act as a burning material. When binded with oil, the powder generated from dry flowers can be hand rolled and used as incense sticks emanating fragrance.

Other excipients:

Gum tragacanth-

Greenish colour is obtained after boiling tragacanth with strong iodine solution.

To 4 ml of aqueous solution of tragacanth, 1 ml of dilute hydrochloric acid is added and heated on water bath for 30 minutes for reducing sugars.

Uses- it is use as thickener, viscosity modifiers, binder, fixator, film former.

Gaur gum-

It does not produce pink colour when treated with ruthenium red solution.

A 2% solution of lead acetate gives an instant white precipitate with guar gum.

Uses-guar gum is a polysaccharide that acts as a thickener, emulsifier and stabilizer in cosmetic formulations. Some formulations use guar gum and xantham gum together to increase viscosity of lotions and creams. Guar gum acts as a stabilizer, preventing most solid particles from settling in finished products.

Charcoal

Charcoal is mostly pure carbon, made by cooking wood with low oxygen. The process can take days and burns off volatile compounds such as water, methane, hydrogen and tar and leaves about 25% of black lumps and powder of the original weight.

Charcoal cavity test- mix a small amount of the salt with double its quantity of sodium carbonate in a watch glass. Place the mixture in the cavity made on the block of charcoal; moisten the mixture with a drop of water. Direct the reducing flame of the Bunsen burner on the cavity by means of mouth blow pipe. The test is based on the fact that metallic carbonates when heated in a charcoal cavity decompose to give corresponding oxides. The oxides appear as coloured incrustation or residue in the cavity.

Uses- it acts as an adsorbent and is needed for proper burning of incense sticks.

Saw dust-

These are tiny particles of wood that are formed from sawing or sanding wood. It was collected from the factory producing wooden furniture and then cleaned and finely sieved for equal particle size. Fine saw dust particles were used.

Perfume-

It is used to give aesthetic effect to the incense stick, to create soulful atmosphere and mindfulness.

Formulation of incense stick:

All the above ingredients were accurately weighed and mixed. Water is added slowly in sufficient quantity till the powder becomes dough and gum swells. The dough is then kneaded and then small quantity is taken and hand pressed and rolled around the small thin bamboo sticks. It is rolled till the incense sticks become uniform. These incense sticks are then allowed to dry at room temperature for overnight. These sticks are then dipped in diluted perfume oil for fragrance. Now sticks are dried for few minutes and now are ready for use.



DISCUSSION:

Incense sticks are the part and parcel of every Indian ritual beyond religion and caste. The sticks are used to create positive vibes in atmosphere and are believed to promote concentration which ultimately leads every soul near to godliness. The prepared incense sticks were perfumed with different perfumes like floral perfumes, sandalwood, musk, etc. When burnt it created good fragrant atmosphere and also the fragrance were lingering after the stick was completely burnt. Also it created less ash and is a ecofriendly product. The formed sticks burnt completely and were stable at room temperature. The stick possesses good physical and organoleptic properties.

CONCLUSION:

The ecofriendly marigold incense sticks prepared were acceptable and had satisfactory results with good aromatic character and had a belief that they are safe to use. Here the attempt is made to reduce floral waste, reduce water pollution i.e. to maintain purity of river Godavari and convert it to a value added product. The study can lead to the commersiation of product and has potency to create new opportunities in business sector.

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