

“Formulation and Evaluation of Jasmine Oil Based Solid Perfume”

Ganta.Manasa*, Tirunagari. Anupama, Ajith jakkula, Modugu Soujanya,
Gugilla Kavitha, Dr. kumar raja.Jayavarapu, Dr. Dasari. Praveen kumar
Mother Teresa Pharmacy College, Kothuru, Sathupally- 507303, Khammam Dist., T.S.

Date of Submission: 10-07-2025

Date of Acceptance: 20-07-2025

ABSTRACT

Beeswax-based solid perfume is an unusual and all-natural fragrance product that is kind to the skin and lasts for a long time. Essential oils, carrier oils, and beeswax are among the natural elements used to make this kind of scent. In order to combine the other ingredients and produce a solid, compact texture, the beeswax functions as a natural emulsifier. The aroma is produced by the carrier oils and essential oils and is gradually and delicately released throughout the day. Because it is easier to apply, more portable, more eco-friendly than typical liquid fragrances, beeswax-based solid perfume is a great substitute. Due to the absence of alcohol and artificial components that can cause skin irritation, it is also an excellent option for people with sensitive skin. As well as the assessment indices of these elements, a number of quality factors have been devised to guarantee the success of the collection that is being presented. These factors will be the same for each of the four perfumes in the collection. Physicochemical variables, which determine the product's melting point and stability, and sensory elements, which include things like the product's suitability for the skin, are two categories of quality factors. pH value 7, melting point 90°C, and mm/second.

Keywords: Essential oil, Carrier oil, Eco-friendly, formulated products, perfumery.

I. INTRODUCTION

1.1 PERFUME

Perfume is a mixture of fragrant essential oils or aroma compounds (fragrances), fixatives and solvents, usually in liquid form, used to give the human body, animals, food, objects, and living-spaces an agreeable scent. Perfumes can be defined as substances that emit and diffuse a pleasant and fragrant odor.

Perfume is a liquid that gives people, things and rooms a good smell. It is made of oils which give off scent to the surrounding air. The

odoriferous compounds that make up a perfume can be Perfumes were used in the earliest human civilizations.

Modern perfumery began in the late 19th century with the commercial synthesis of aroma compounds such as vanillin or coumarin. The artificial compounds gave a wider range of scents than natural materials. Manufactured synthetically or extracted from plant or animal sources.

1.2 NOTES IN PERFUME:

Notes in perfumery are descriptors of scents that can be sensed upon the application of a perfume. Notes are separated into three classes:

- ✓ Top/head notes
- ✓ Middle/heart notes
- ✓ Base/soul notes

Which denote groups of scents which can be sensed with respect to the time after the application.

1.3 TOP/HEAD NOTES:

Top notes are otherwise called the head notes. Perceived immediately upon application of a perfume, top notes consist of small, light molecules that evaporate quickly. They form a person's initial impression of a perfume and thus are very important in the selling of the product. The scents of this note class are usually described as "fresh", "assertive" or "sharp". The compounds that contribute to top notes are strong in scent, very volatile, and evaporate quickly. Although not as saliently perceived, the heart and base-notes contribute much to the scent in the top notes. Citrus and ginger scents are common top notes.

1.4 MIDDLE/HEART NOTES:

Also called the "heart notes", the middle notes are the scent of a perfume that emerges just before the top notes dissipate. The middle note compounds form the "heart" or main body of a perfume and emerge in the middle of the perfume's dispersion process. They serve to mask the often-

unpleasant initial impression of base notes, which become more pleasant with time. The scent of middle note compounds is usually more mellow and "rounded". Scents from this note class disappear anywhere from twenty minutes to one hour after the application of a perfume. Lavender and rose scents are typical middle notes.

1.5 BASE/SOUL NOTES:

Also called the "soul notes", base notes are the scent of a perfume that appears close to the departure of the middle notes. The base and middle notes together are the main theme of a perfume.

Base notes bring depth and solidity to a perfume. Compounds of this class are often the fixatives used to hold and boost the strength of the lighter top and middle notes. Consisting of large, heavy molecules that evaporate slowly, compounds of this class of scents are typically rich and "deep" and are usually not perceived until 30 minutes after the application of the perfume or during the period of perfume dry-down. Some base notes can still be detectable in excess of twenty-four hours after application, particularly the animalic and musk notes.



Figure1: Notes Of Perfume

TYPES OF PERFUMES:

1. Perfume or Parfum
1. Eau de Perfume
2. Eau de Toilette
3. Eau de Cologne
4. Eau Fraiche
5. Perfume Oil

SOLID BASE PERFUME

A solid base perfume is a type of fragrance product that is designed in a solid form rather than the traditional liquid sprays or oils. These solid perfumes are often made using a base of natural waxes, butters, and oils, which act as carriers for the fragrance oils. The solid form offers a more compact, travel-friendly option for users and is a great alternative for those who prefer something more discreet and portable.

Solid perfumes or cream perfumes are perfumes in solid state rather than the liquid

mix of alcohol (ethanol) and water used in eau de parfum, eau de toilette, eau de cologne, etc. Normally the substance that gives the cream its base comes from a type of wax that is initially melted.

Solid perfumes, also known as cream perfumes or solid colognes, offer a unique alternative to traditional liquid perfumes due to their solid composition rather than the typical mix of water, alcohol, or fragrance and carrier oil. Nowadays, luxury perfume companies sell their unique fragrances in a solid state. Due to their waxy nature, these are small, leak-proof, and portable. This is fantastic news! Solid fragrances, as opposed to liquid ones, can be reapplied discreetly in public without risking a mess. Demand for sustainable and natural choices is also increasing. In 2023, Solid was valued at approximately USD 1.65 billion. By 2032, it is expected to reach USD 4.7 billion! A major factor

in this rise is the rising demand for personal care and scent goods among consumers.



Figure no: 2. Solid base perfumes

Benefits of Solid Perfume:

Wearing perfume has numerous benefits; it can improve your mood or help you project your personality more effectively. Perfume lovers experiment with various fragrances, combinations, brands, and even textures. Most people are familiar with and use liquid perfumes that come in various sizes.

There is also a creamy-textured solid perfume that comes in small cases.

These are not widely available in general stores, but rather in specialized shops or establishments. You don't have to worry, though, because Nuutjob's solid perfume comes in any aroma you want, such as beeswax, candelilla wax, avocado oil, and so on.

We know you're wondering why you should switch from liquid to solid perfumes

PLANT PROFILE

JASMINE (OIL)

Jasmine is a genus of shrubs and vines in the olive family of Oleaceae. It contains around 200 species native to tropical and warm temperate regions of Eurasia, Africa, and Oceania. Jasmines are widely cultivated for the characteristic fragrance of their flowers. Jasmine can be either deciduous or evergreen, and can be erect, spreading, or climbing shrubs and vines. The leaves are borne in opposing or alternating arrangement and can be of simple, trifoliate, or pinnate formation.

5.1.1 Scientific classification:

Kingdom: Plantae (Plants)

Phylum: Angiosperms (Flowering plants)

Class: Eudicots

Order: Lamiales

Family: Oleaceae (Olive family)

Genus: Jasminum (Jasmine)



Figure no:03 jasmine oil

5.1.2 Plant description:

Type: Jasmine plants can be shrubs, vines, or small trees.

Height: They typically range in height from 1 meter (3 feet) to over 6 meters (20 feet), depending on the species and growing conditions. Climbing varieties can grow taller with support.

Leaves: The leaves are usually opposite, simple, and lance-shaped, with a glossy texture. They are often green but may have a slightly different shade or texture depending on the species.

Flowers:

The flowers are the most notable feature, known for their pleasant, sweet fragrance. They typically have five petals and come in a variety of colors, such as white, yellow, pink, and sometimes red or purple. The flowers are often star-shaped or funnel-shaped, depending on the species. Jasmine flowers are usually small to medium-sized and can bloom in clusters or alone, depending on the variety. They have a very strong, sweet scent, which is why they are widely used in perfumes and aromatherapy.

Climbing or Sprawling: Many jasmine species are climbers, using tendrils to support themselves, while others grow as bushy, shrubby plants.

Roots: Jasmine plants often have a deep, woody root system that can spread widely. This makes them quite hardy in well-drained soil.

Stem: The stems are often flexible, with some species being semi-woody or fully woody as they mature.

Chemical constituents:

Essential Oils, Flavonoids, Alkaloids, Organic Acids

Uses:

Jasmine has been used for liver disease (hepatitis), pain due to liver scarring (cirrhosis), and abdominal pain due to severe diarrhea

(dysentery). It is also used to prevent stroke, to cause relaxation (as a sedative), to heighten sexual desire (as an aphrodisiac), and in cancer treatment.

Aromatherapy:

- **Stress Relief:** Jasmine is used in essential oils and diffusers to help reduce stress, anxiety, and depression. Its calming properties promote relaxation and uplift mood.
- **Sleep Aid:** The soothing scent of jasmine is known to help improve sleep quality by calming the nervous system.

Perfume and Fragrance:

- **Perfume:** Jasmine flowers are a key ingredient in many perfumes due to their rich, sweet fragrance. They add a luxurious and sensual note to fragrances.
- **Room Freshener:** Jasmine's pleasant scent is also used in room sprays and air fresheners to create a calming atmosphere.

Skin Care:

- **Moisturizing:** Jasmine is used in skin care products for its hydrating properties. It can help nourish dry skin and maintain a healthy, glowing complexion.
- **Anti-Aging:** The antioxidants in jasmine are believed to help reduce the appearance of wrinkles and fine lines, making it a popular ingredient in anti-aging creams.
- **Soothing:** Jasmine can be applied to irritated or inflamed skin to reduce redness and promote healing, particularly for conditions like eczema or minor burns.

Medicinal Uses:

- **Calming and Anti-Anxiety:** Jasmine is sometimes used in traditional medicine for its calming effects, helping to alleviate anxiety and stress.
- **Antioxidant:** Jasmine contains antioxidants that help protect cells from damage caused by free radicals, supporting overall health.
- **Antibacterial:** Jasmine oil has mild antibacterial properties and can be used to treat minor skin infections.

ROSE OIL

Roses are one of the most beloved and iconic flowers in the world, known for their beauty, fragrance, and symbolism. These flowers belong to the *Rosa* genus, which contains over 100 species, as well as countless hybrids and cultivars. Roses

can be found in a variety of colors, shapes, and sizes, and they are often associated with love, romance, and beauty.

Rose oil is a fragrant essential oil derived from the petals of various species of roses, particularly *Rosa damascena* (Damask rose) and *Rosa centifolia* (Cabbage rose). Known for its luxurious, sweet, and floral scent, rose oil has been prized for centuries in skincare, aromatherapy, and perfumery.

Scientific classification:

Kingdom: Plantae (Plants)

Division: Angiosperm

Class: Eudicots

Order: Rosales

Family: Rosaceae (Rose family)

Genus: *Rosa*

Species: Various species of roses are used for rose oil, primarily:

- *Rosa damascene* (Damask Rose)



Figure no:03.Rose oil

- *Rosa centifolia* (Cabbage Rose)

Plant description:

Height:

The height of rose plants can vary significantly, depending on the type.

- **Shrub Roses:** These grow between 3 to 10 feet (1–3 meters) in height.
- **Climbing or Rambling Roses:** These can reach 10–20 feet (3–6 meters) or more, depending on how they are trained.
- **Miniature Roses:** These typically stay under 1 foot (30 cm) tall.

Stems and Thorns:

Roses typically have woody stems with sharp thorns or prickles. These thorns act as a defense mechanism against herbivores and predators. The stems are generally covered with a

layer of fine, soft hairs or fine spines, and the thorns may vary in size and shape depending on the species.

Leaves:

Rose leaves are compound, meaning each leaf consists of multiple smaller leaflets. The leaflets are typically oval-shaped, serrated (jagged edges), and have a glossy appearance and the leaves are arranged alternately along the stem, with each leaf having a pair of stipules at its base. Most rose leaves are dark green, although some species can have reddish or purple tinges when young.

Flowers:

Roses are renowned for their large, multi-petaled blooms, which come in a variety of shapes and sizes. Rose flowers are typically 5-petaled (in wild species), but many cultivated varieties have more petals due to selective breeding. They range in color from red, pink, white, yellow, orange, purple, and even bi-Colored varieties. The flowers have a characteristic fragrant scent, which varies depending on the variety. Some have a strong, sweet fragrance, while others are more subtle.

Fragrance:

The fragrance of roses is often a key feature. Rose oil, extracted from the petals, is used in perfumes and cosmetics due to its rich, floral scent. The intensity of the fragrance varies with species and hybrid types. Some roses are intensely fragrant, while others have minimal scent.

Blooming Period:

Roses bloom at various times depending on the species and climate. Many hybrid roses bloom repeatedly throughout the growing season, while wild species often bloom once in the summer.

Root System:

Roses have a fibrous root system with a well-developed primary root. Some species, especially hybrid varieties, may also have a deep taproot. The roots are spread out and help in absorbing water and nutrients from the soil. Rose plants require well-drained soil for optimal growth.

Reproduction:

- **Pollination:** Roses can be pollinated by insects, especially bees, which transfer pollen from one flower to another. Some rose

varieties are self-pollinating, while others require cross-pollination.

- **Seeds:** Roses can reproduce from seeds, although this method is often not used in gardening due to the long period it takes for the plants to mature.
- **Vegetative Propagation:** More commonly, roses are propagated through cuttings, grafting, or budding, where parts of a mature plant are used to create new ones. Many of the most popular rose varieties today are hybrid roses that are propagated through these methods to preserve desirable traits.

Uses of the Rose Plant:

Ornamental:

- Roses are primarily grown for ornamental purposes in gardens, public spaces, and as cut flowers. They are also popular in floral arrangements and bouquets.

Culinary:

- Some rose species' petals are edible and used in jams, jellies, teas, and desserts.

Perfume and Essential Oils:

- Rose petals are the source of rose oil, which is used in high-end perfumes and cosmetics due to its rich fragrance and skin benefits.

Medicinal:

- Rose hips, the fruit of the rose plant, are rich in vitamin C and are often used in herbal teas, syrups, and supplements.

Skin Care:

- Known for its moisturizing, anti-inflammatory, and antioxidant properties, rose oil helps soothe irritated skin, reduce redness, and enhance skin elasticity. It is often used in anti-aging and hydrating products.

Aromatherapy:

- Rose oil is commonly used for emotional balance, helping to reduce stress, anxiety, and symptoms of depression. Its calming effect can uplift mood and promote relaxation.

Antibacterial & Antiseptic:

- It has mild antibacterial properties, making it useful for minor wounds and skin infections

II. MATERIALS AND METHODS

Plant Material:

The plant specimen for the purposed study Jasmine oil (*Jasminum officinale*) and cocoa butter was commercially obtained from the local market.

Formulation method:

- Cocoa butter and beeswax were melted at 90°C.
- jasmine oil and rose oil as fragrance was mixed with olive oil and then added to wax compound.
- After 30 minutes of stirring to ensure homogeneity, the liquid was cooled and left to solidify at room temperature.

Table no:01 Formulation table

SINO	INGREDIENTS	F1	CATEGORY
01	Cocoa butter	10g	Skin Moisturizer
02	Beeswax	50g	Antioxidant
03	Olive oil	10ml	Moisturizer
04	Jasmine oil	30ml	Soothing
05	Rose oil	20ml	Moisturizer

EVALUATION OF SOLID BASE PERFUMES:

Organoleptic tests:

The color, odour, appearance & texture of the formulation was observed visually. The formulation procedure uniform distribution of extracts. This test was confirmed by visual appearance and by touch.

Melting point:

Melting point was observed by using a thermometer. Nearly taken 1g of solid base perfume was properly weighed and place in the beaker. This beaker placed in a water bath and gradually increasing the temperature when it starts to melt and becomes completely liquid. record the temperature as a melting point.

pH Value:

A pH paper was calibrate using a standard buffer solution. Nearly 10g of solid base perfume was properly weighed and dissolved in a 100 ml of distilled water and stir the solution well to ensure perfume is fully dissolved. Dip the pH paper strip into the solution. Compare the resulting colour to the pH chart. The skin has an acidic range and the pH of the solid base perfume should be in the range of 4-8.

Skin irritation test:

The perfume was applied in a certain area and time was noted. Apply a small amount of perfume to a discrete skin area and wait 24-48 hours. Evaluate skin for irritation (redness, itching, swelling, blistering).

Washability:

Test was carried out by applying a small amount of perfume on the hand and wait 15-30 minutes. Wash the hand with soap and water and repeat washing cycle 3-5 times was easily washable.

Solubility test:

Solubility was observed in perfume. Mix the perfume with solvent (e.g., ethanol, water, glycerin) and observe the solubility at different temperatures (20°C, 40°C). Evaluate perfume's ability to dissolve completely.

Grease spot test:

Evaluate the perfume's ability to leave a grease spot or stain on surfaces. Apply a small amount of perfume to a surface (e.g., fabric, paper, skin) and allow the perfume to dry completely. Observe and record the presence or absence of a grease spot or stain.

Iodine test:

To determine the presence of unsaturated compounds, such as double bonds, in the oils or ingredients used in the base of the perfume. Take a small amount of the solid base perfume and dissolve it in a solvent (like ethanol or acetone) to make it easier to handle and ensure even mixing. apply a small amount of perfume to a filter paper and place the paper on a flat surface. Observe the spreading of the perfume and note the grease spot.

Burning test:

The burning test for solid base perfumes is a simple way to assess the combustion characteristics and the types of ingredients in the perfume base. set up the test in a well-ventilated area. Make sure there are no flammable materials nearby and use a non-flammable surface (like a metal plate or ceramic dish) to place the perfume sample on. Take a small piece of the solid base perfume using tweezers or forceps and place it on the non-flammable surface and using a match or lighter, carefully light the edge of the perfume. allow it to burn slowly for a few seconds.

Anti-fungal Activity:

To test the anti-fungal activity of a solid base perfume, firstly we prepare fungal culture. Take a beaker pour 50 ml of water and take Potato Dextrose Agar in conical flask both are sterilized in autoclave. After that the sterilized water take 10 ml in fungal culture and dissolve it. The dissolved fungal culture takes 1 ml into agar medium and these agar media poured into the petri dishes and leave it for solidify. Making bours at the centre of the cultural medium in that pour our solid base perfume in liquid form and incubate all test tubes or microplates at 25–30°C for 24–72 hours, depending on the growth rate of the fungal

strain. After the incubation period, observe the fungal growth in each test tube and the degree of fungal growth can be measured by turbidity (cloudiness) in the broth. Less turbidity indicates less fungal growth.

Microbial examination of the product:

In this method, the mixed culture is diluted directly in tubes of liquid agar medium. The medium is maintained in a liquid state at a temperature of 45° to allow through distribution of the inoculum. The inoculated gar medium is transferred into Petri plate, allowed to solidify and incubated. In the series dilution technique, the original inoculum may be diluted by using sterile water or saline solution so that the concentration of the microbes gradually become less. Mix 1 ml diluted in 20 ml of liquid nutrient agar medium at 45°. Shake the liquid agar medium and sample; pour in a sterile Petri plate, solidify and incubate.

Stability studies:

Stability studies for solid base perfumes are essential to assess the quality, performance, and shelf-life of the product over time. Solid perfumes are typically composed of a combination of waxes, oils, and fragrance compounds. Understanding how these ingredients interact and maintain their integrity under various environmental conditions is crucial for ensuring the product's safety and efficacy.

Cyclical Temperature Test:

These are is not carried out any fixed temperature and humidity. In this test, temperature was changed cyclically every day. At room temperature and frizzling temperature to stimulate the changes in temperature.

III. RESULTS AND DISCUSSION:

Table no:02 Results for formulation

SI NO	PARAMETERS	F1
01	Colour	Creamy White
02	Odour	Pleasant
03	Appearance	Smooth
04	Texture	Smooth
05	Melting point	60°

06	pH value	7-neutral
07	Skin irritation test	No irritancy
08	Washability	Easily washable
09	solubility	Soluble in ethanol
10	Grease spot test	Presence of grease spot
11	Iodine test	Colour changes
12	Burning test	It forms fumes
13	Anti-fungal test	6mm
14	Microbial content	9mm

Stability studies:

The formulation was undertaken stability studies for physical and chemical changes. No

considerable variations in properties of the formulation were observed.

Cyclic Temperature Test:

Sl.NO	Parameter	Stability
01	Freezer temperature	stable
02	Room temperature	stable

IV. CONCLUSION

The nourishing qualities of beeswax, olive oil, and cocoa butter, along with the captivating floral scents of jasmine and rose oils, are combined in this solid perfume to create a natural, skin-loving scent that is long-lasting and simple to apply. This blend is ideal for on-the-go use and is a lovely and comprehensive substitute for synthetic perfumes.

Beeswax is essential because it gives food a solid but spreadable texture, serves as a natural preservative, and helps retain moisture. Rich in vitamins and antioxidants, olive oil provides the skin with profound nourishment, resulting in a moist and smooth application. Cocoa butter improves the viscosity of the balm and provides skin-softening properties by adding an additional layer of emollience.

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