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RESEARCH

A new cosmetic science: Design and evaluation of herbal lipstick

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Cosmetic Science is a crucial multidisciplinary component in many scientific disciples and spans the natural sciences, humanities, and social sciences. The 35-year-old predecessor, Cosmetic Science, is totally revised in New Cosmetic Science. In addition to talking about cosmetics' safety, this article also describes the "usefulness of cosmetics," a subject that is quickly gaining importance and comprising body cosmetics, dental care, cosmetics, makeup cosmetics, perfumes, and skin care cosmetics. The presentation of oral care and body cosmetics includes information about each product's performance, types, primary ingredients, suggested uses, and manufacturing processes. Cosmetics have both physical and psychological effects. Lipstick formulas are used in cosmetics to improve the appearance of lips. Lipstick is a cosmetic item that gives the lips color, texture, and protection while also having pigments, oils, and waxes. Several different types of lipstick are only worn by women. The natural and safe component is found in organic lipstick. Additionally, they contain natural nutrients that support healthy lips. Using natural color extracts from various natural sources might lessen the negative effect.

Keywords: beauty, herbal products, lipsticks, cosmetics, natural color, skin cleanser

Introduction

Cosmetics are made up of mixes of chemical components that are either synthesized or taken from natural sources. Cosmetics serve a variety of functions. The skin can be cleansed or protected using products intended for personal care and skin care. Cosmetics that improve skin can be used to hide imperfections, highlight one's natural features, add color to the face, or completely alter the appearance of the face. Cosmetics may be created to enhance body scent.

Figure 1 has an example of some cosmetics. The business that creates and sells cosmetics is known as the cosmetics industry. These include cosmetics like mascara and foundation, skincare products like moisturizers and cleansers, shampoos, conditioners, and hair colors, as well as amenities like bubble baths and soap. Johnson & Johnson is one of the biggest manufacturers of cosmetics.

Drug and cosmetic act of 1940 and 1945

It was passed in 1940 and was initially known as the Drug Act. In 1945, the relevant drugs rules were adopted. The act, presently known as the Drugs and Cosmetics Act, 1940 has undergone numerous revisions since it was first passed in 1940. The statute defines "cosmetic" as any item intended to be applied to the body of a human for beautification, cleansing, or enhancing the appearance of the skin. The statute was revised in 1964 to cover medicines from Ayurveda and Unani. The requirements for medications are laid out in Section 16 of the Act. "Misbranding" is defined in Section 17. If a medicine implies that it has greater therapeutic benefit than it actually does, it is said to be misbranded.

A request to stop producing such a medicine under Section 18 may be made to the manufacturer. Drugs that are false or

FIGURE 1 | Cosmetics.

contaminated are covered in Section 27. More of those drug ingredients must be listed on the label, according to the law. The powers of narcotics inspectors are outlined in Section 22, and the stringent protocol that inspectors must adhere to when conducting raids is outlined in Section 23. The Medications and Cosmetics Rules, 1945, contain provisions for classifying products into certain schedules and provide instructions for the storage, sale, exhibition, and prescription of each schedule. The terms of licensing are described in Rule 67. The labeling guidelines are found in Rule 97.

- **Schedule D:** List of drugs exempted from the provision of import of drugs.
- **Schedule Q:** Contains a list of permitted dyes and pigments in soap and cosmetics.
- **Schedule M:** Contains various regulations for manufacturing, premises, waste disposal, and equipment.

Penalties under the drugs and cosmetic act for sale, manufacture of drugs

Any person who produces items for them to sell or distribute, sell, stock, show, or offer for sale/distribution includes the following: Any drug that is deemed to be spurious or adulterated under Section 17 A or Section 17 B and that, when used by a person for the treatment, diagnosis, mitigation, or prevention of any disorder or disease, is likely to result in that person's death or is likely to result in physical harm that would constitute significant hurt under Section 320 of the IPC solely because that drug is spurious or adulterated, as the case may be, is punishable by imprisonment.

Condition for obtaining a license to import and export cosmetics in India and abroad

In India, the Drugs and Cosmetics Act, 1940 and the Drugs and Cosmetic Rules, 1945 govern the import, manufacture, sale, and distribution of drugs. For the import of medicines and cosmetics covered by Rules 10 and 10A, an import license is offered. An import license application must be submitted using the format and procedure outlined in Rule 24 to be granted. When satisfied, the licensing body will provide an import license. From the date of issuance, the import license is good for 3 years.

Documentation

Batch manufacturing record

A batch manufacturing record (BMR) is a crucial file for producers of chemicals and processes: It instructs consumers on how to make a batch of a particular product and then documents the entire process from beginning to end.

Master formula record

The exact information about each individual batch is recorded in a Master Formulation Record, which is crucial for both efficient process control and regulatory compliance. The preparation of the medicinal product is described in full in this technique.

Quality audit report

An internal or external quality auditor will conduct a quality audit, which is the systematic assessment of a quality system. It is a crucial component of the ISO 9001 quality system standard and a crucial feature of any organization's quality management system.

Distribution report

primary distributor's license

Applications for a primary distributor's license are submitted to the prefectural pharmaceutical affairs division that has jurisdiction over the place of business where the marketing supervisor-general works. Each time after 5 years, licenses must be renewed. Applicants must appoint a marketing supervisor-general and adhere to the Good Quality Practice (GQP) and Good Vigilance Practice (GVP) standards. The Act expressly places responsibility for ensuring product quality after marketing and taking the necessary steps to manage safety on the shoulders of major distributors.

A business code number must be acquired in advance by applicants. Application materials may also include

a floor plan of the business office and storage facility, a list of the segregated duties, a medical certificate attesting the applicant, certifications of the marketing supervisor qualifications general and an employment contract, as well as copies of the corporate registration and other paperwork. A floor layout of the manufacturing plant, a certification of the responsible engineering manager's qualifications, employment documents, and copies of any contracts with testing laboratories are also needed. A list of the ingredients from the import supply manufacturer or a document of the testing and inspection results attesting that the product does not contain any prohibited combinations must be attached to those forms.

Approval for primary distribution by product category

In particular ingredient groupings, the Cosmetics Standards specify which components are authorized in cosmetics combinations and which ones are subject to prohibition or restriction. Except for those covered by a negative list of combinations that either limits them, all other substances may be used in cosmetics combinations following the safety verification and selection. In this regard, the labeling must include a complete list of all the ingredient names. Approval for primary distribution per product item is not necessary as long as the ingredients comply with the Cosmetics Standards and are listed on the labeling. Products with component quantities over the notifiable limit, nevertheless.

Handling returns goods

Responsibilities-handling of returned goods

When finished goods are returned, warehouse staff must notify the Quality Assurance & Production department and keep track of the returns.

The warehouse staff must verify all of the returned goods' paperwork and their physical status, and they must store them under the advised manner.

Personnel in charge of quality assurance must check the physical state of returned goods and guarantee that the established procedure is carried out in accordance with Standard Operating Procedure (SOP).

After all packing activities have been completed; Quality Assurance (QA) staffs members must supply repacking of finished goods and returned goods, remove the Control Sample, and release the batch. The SOP will need to be reviewed and approved by the plant head and the quality head.

Returned goods

The material does not adhere to the stated specifications or the requirements of the client. The material that was returned due to breakage, defective packaging, or other business or administrative issues. Removal of a specific batch or batches from the market under the product recalls process.

Receipt and handling of returned goods

The returned merchandise must be picked up by warehouse staff from the market or other locations, and all materials must be stored on separate pallets according to the proper storage conditions for the individual products, either in the designated area for return merchandise or in another area marked with blue rope.

Recalling and waste disposal

Recall

The recall is a step taken to remove a medicine from circulation or usage, along with any necessary remedial action, when reported quality, effectiveness, or safety issues are present. Serious adverse reactions as well as causes of mortality are included in recalls that are safety and effectiveness related. Drugs that are prohibited by the Drugs & Cosmetics Act's provisions as well as goods whose product licenses have been suspended or revoked are included in recalls. Only notifications with a high level of urgency and danger should be sent via the Rapid Alert System. The severity of the flaw, as well as its potential to hurt patients, animals, consumers, operators, or the environment, must be evaluated.

Recall classification

Recall classification is a numerical designation, I, II, or III, given to a specific product recall by national regulatory bodies to denote the relative level of health hazard. All recalled drugs and products that are illegal to sell and whose licenses have been suspended or revoked must also be classified as Class I recalls exclusively.

> **Class I** is one in which there is a reasonable chance that using a defective product would result in major negative health effects or death and is also prohibited by Section 26A of the 1940 Drugs and Cosmetics Act.
> **Class II** situations are those in which the use of a defective product may result in brief health issues or in which the likelihood of major adverse health effects is remote.

Class III refers to situations where using or being exposed to a defective product is unlikely to have any negative health effects.

Recall procedures

Every batch of a product that does not adhere to the established quality criteria needs to be pulled from the market. There are two different types of recall: statutory recall and voluntary recall.

Cosmetic products waste disposal

The challenge as we see it

Common cosmetics including lipstick, mascara, eye shadow, foundation, rouge, skin cleansers and lotions, shampoo, nail polish, polish removers, perfume, and cologne are among the products that many companies have outgrown, damaged, or abandoned.

Our differentiated value

We offer an environmentally friendly disposal method that complies with all legal criteria, lessens generator liability, and eases administrative strain.

Our solutions for cosmetic products waste disposal

Depending on how many cosmetic goods you need to discard, we can tailor a recycling program for you. We will work with you to set up a collection program, help you examine your present waste streams, and train your team on the advantages of appropriate disposal.

- **Recycling designed to fit your needs:** We have created a recycling program for both large and little amounts of cosmetics. We can provide a combination of mail-back, pre-paid recycling containers for small quantities or can set up a pick-up for bigger quantities, depending on whether you require service for one facility or numerous locations across the country.
- **On-time pick-up:** We keep our word when we say we will pick you up. You may count on us to show up promptly once agreements have been made.
- **Documented compliance:** We will give a certificate confirming that your cosmetic items were received and handled in line with all rules once they have been recycled or properly disposed of.

Current good manufacturing practices of cosmetics as per the regulatory authority

FDA regularly monitors medication manufacturers' compliance with its Current Good Manufacturing Practice (CGMP) requirements to assure the quality of drug products. The minimal standards for the processes, settings, and controls utilized in the creation, processing, and packaging of a drug product are laid forth in the CGMP laws for pharmaceuticals. The rules ensure that a product is safe to use, that it has the components and strength it purports to have and that it is labeled accurately. An examination of the manufacturer's adherence to the CGMPs is part of the approval process for new and generic drug marketing applications. Assessors and investigators from the Food and Drug Administration (FDA) decide if the company has the facilities, tools, and capacity to produce the medication it proposes to market.

Study of ICH guidelines for stability studies

Q1A: Stability testing of new drugs substances and products.
Q1B: Stability testing: Photostability testing of new drug substances and products.
Q1C: Stability testing for the new dosage form.
Q1D: Bracketing and matrixing designs for stability testing of new drug substances and products.
Q1E: Evaluation of stability data.
Q1F: Stability data package for registration application in climatic zones III & IV.

Cleansing and care needs for body

Cleansing and care needs for face

i. Face cleansers

A cleanser is a facial care product used to clean the skin on the face of makeup, dead skin cells, oil, grime, and other types of impurities. Additionally, it aids in pore opening and the prevention of skin conditions like acne.

ii. Face wash

These are the products that aid in removing dead skin cells, oiliness, and flecks from the face. They offer the greatest skin complexation.

iii. Face moisturizer

The use of a face moisturizer might help to keep the skin from drying out. By eliminating the dirt from them and opening the pores, it gives skin hydration and heals the pores.

iv. Face masks

Face masks aid in improving skin hydration and pore refinement. It reduces fine wrinkles and gives the skin on the face a firmer, more even tone.

Care needs for face

- Cleanse your skin first thing in the morning.
- After washing your face in the morning, use toner.
- After toning, moisten.
- Every morning, use sunscreen.
- Before going to bed, wash and moisturize your face again.
- Apply a serum to the spots before going to bed.
- Exfoliate every 1–2 weeks.
- Conduct a self-check once a month.

Cleansing and care needs for eyelids

Because the eyes are such a delicate component of the body, care should be given to keep them healthy. In addition to taking care of oneself, one must also clean one's face and apply makeup.

Eye care and makeup products

i. Eye shadow

Eye shadows are sold in a variety of hues and are used to give the eye a background of color. Traditional color schemes include blue, green, and brown.

They might be in a paste-like liquid form or a solid form. There are several types of solid-form eye shadow, including powder compacts, oil-based sticks, and pencils. Eye shadows with a liquid base can have paste or emulsion bases: A kind of o/w or w/o emulsion.

ii. Eye mascara

Mascara is a cosmetic that is frequently used to make eyelashes appear longer, darker, thicker, and more defined. Modern mascara products typically come in one of three forms liquid, cake, or cream but they all have the same fundamental ingredients, which are pigments, oils, waxes, and preservatives.

iii. Eyeliners

Eyeliner is a cosmetic that is used to define the eyes by applying it along their contours.

Types of eyeliner

a. Liquid eyeliner: It is the first option. Applying with a brush.
b. Gel eyeliner: Gel eyeliner is applied with a little brush and comes in a container. The gel can be used to draw angular lines and give eyes a catlike appearance.
c. Pencil eyeliner (Kohl): It comes in the form of a pencil that is used to add various cosmetic effects straight to the eyelids.

Care needs for eyelids

- Remember to drink plenty of water to keep your body hydrated.
- Use eyelid moisturizers to reduce the appearance of expression lines.
- After taking a shower is the ideal time to moisturize.

Cleansing and care needs for dental cavities

- Brushing your teeth after each meal or at least twice daily.
- Consistently floss your teeth.
- A healthy diet.
- Other dental cleanings in between
- Rinsing.
- Regular dental examinations.

Cleansing and care needs for lips

Lip care products types:

Table 1 it indicates natural and synthetic lip care products. Lips are the more beautiful feature of our bodies; they draw attention like a magnet; they require care and cleansing since they represent both the body's internal and external health.

Lips care products

i. LIP SCRUB

Lip scrubs often contain waxes, oils, fats, and butter that serve to hydrate and moisturize the skin, making them

TABLE 1 | Lip care products.

Sr. no	Natural	Synthetic
1	Aloe Vera	Lip scrubs
2	Honey, Butter, Milk Cream	Lipsticks
3	Sugar	Lip balm
4	Tomatoes, Beetroots, Rose petals	Lipgloss

somewhat similar to lip balms in that regard. Lip scrubs are excellent for getting rid of a little bit of dry skin.

ii. LIP BALMS

Lip balm is a wax-like material that you apply to moisten and relieve the pain of chapped or dry lips since they have thin skin and are more susceptible to dryness than other parts of the body. Lip balm offers defense against wind, cold, and dry air on the lips.

iii. LIPSTICKS

Cosmetic items made with oils and waxes these preparations enhance the appearance of lips and are non-tacky. Emollients and pigments that apply color texture and protection to lips.

iv. LIPGLOSS

Lip gloss is a cosmetic that is primarily used to give lips a glossy sheen and occasionally to add a light tint. It is sold as a liquid, a soft solid (not to be confused with lip balm, which typically has therapeutic or calming functions), or lipstick, which is typically a solid, cream-like product that emits a more intense color.

Care needs for lips

- Avoid touching or licking your lips.
- Consume a balanced diet.
- Drink plenty of water to stay hydrated.
- Take off makeup overnight keeps your lips moisturized.
- Apply lip balm. Cleanse your lips.
- Always keep lip balm on you. Apply lipstick before going out.

Cleansing and care needs for feet

i. Foot creams

These products clean the feet by removing dead skin cells and aid in regenerating the skin on the feet, preventing dry, chapped, and cracked feet.

ii. Foot washes

These are the products that help diabetes people clean off debris from their feet and smoothen their skin by having a calming impact.

Care needs for foot

- Maintain blood circulation by exercising your feet and keeping them dry, clean, and relaxed each day. It is advisable to walk.
- Regularly check your feet and cut your toenails parallel to each other.
- To prevent an issue with your feet from getting worse, seek treatment as soon as you discover it.

Cleansing and care needs for hands

i. Hand moisturizers

Wintertime is a crucial time to moisturize hands because the severe weather can cause dryness and even cracking of the skin.

ii. Hand sanitizers

A hand sanitizer or hand antiseptic is a non-water-based hand hygiene agent. Most are based on isopropyl alcohol or ethanol formulated together with a thickening agent such as carbomer into a gel, or humectants such as glycerin into a liquid, or foam for ease of use and to decrease the drying effect of the alcohol. Hand sanitizers containing a minimum of 60–95% alcohol are efficient germ killers.

iii. Hand washes

Hand washes are superior to soaps because they are soap preparations. Simple to carry and removes more soaps by percentage. Avoid spreading illness while using.

Care needs for hands

- Use an olive oil/coconut oil/salt scrub to remove the dead skin.
- Use oil to massage your hand.
- Soak for 15–20 min in a concentrated tea solution.
- Apply honey and almond oil to your hands overnight.

Cleansing and care needs for nails

Nail care methods and products

1) Manicure

i. Nail polish remover

It eliminates any residual nail enamel from the nail Plate. Use cotton balls soaked in nail polish remover. Nail polish removers disintegrate Lipids from the nail plate and nitrocellulose. The use of nail polish remover should not exceed once every week.

ii. Cutting, filling, and pumicing

Lukewarm, gently soapy water is used to bathe the nails. This makes the nails softer and cleaner.

iii. Cuticle removers

They increase the softening of the cuticle and of cuticle remnants that stick to the surface of the nail plate since they often contain NaOH and KOH in concentrations of 2.5%.

2) Daily care

Involve the use of:

Conditioners products for fragile nails cuticle cream.

3) Nutritional steps to healthy nails

- Eat a diet that contains 50% fruit and 50% raw vegetables to get the vitamins, minerals, enzymes, and other nutrients you need.

- Wash your nails frequently, especially after engaging in outdoor activities. Put on hand gloves.
- Use foot cream on toenails and hand cream on fingernails.

Cleansing and care needs for scalp

The path that hairs develop along on the scalp. Therefore, hair will be healthier if the scalp is. It is crucial to clean and feed the scalp.

Hair care and cleansing products

i. Hair cleansers

Hair cleansers are soap formulations that remove dirt, debris, and dead skin cells from the scalp.

ii. Hair conditioners

A hair care product called a hair conditioner is used to enhance the look, texture, and manageability of hair. Its major objective is to lessen friction between hair strands to make brushing and combing simpler, which could otherwise harm the scalp.

iii. Hair packs

Hair packs are frequently made with rich components, such as natural oils and lipids, according to its proponents, who claim that deep conditioning treatments can aid in the healing of damaged hair. For durations ranging from a few minutes to a few hours, these advantageous components are present in your hair.

Care needs for scalp

- Do not forget to keep moisture in the air and limit chemical treatments and get a massage.
- Shampooing frequently.
- Cover your scalp with sunscreen and eat healthily.

Cleansing and care needs for neck

i. Cleanser

To ensure there is no buildup of skin or grime, scrub your neck with a light cleanser or cleansing milk a few times per week. Use an antioxidant-infused product to effectively cleanse, brighten, and shield your skin from free radicals.

ii. Exfoliate

Lemon has a naturally brightening effect which can help lessen the appearance of dark skin; exfoliate your neck once a week to remove old, dead skin off the surface.

iii. Moisturizing

Protect your neck from the sun, which is the main cause of skin aging, by applying a moisturizer containing SPF.

Cleansing and care needs for body

i. Soaps

Soaps are crucial cosmetic and cosmeceutical items since they cleanse the body of dirt and dead skin cells and give it a scent. They help the skin stay moisturized.

ii. Shower gels

Shower gel, often known as shower cream or body wash, is a specific liquid cleaner used in showers. Shower gels do not include saponified oil, thus they should not be confused with liquid soaps. Instead, it makes use of artificial detergents made from either plant or petroleum sources. Compared to regular soap, which is also considered to feel less drying to the skin, body washes and shower gel have a lower pH value. In certain capsules, sodium stearate is included in the chemical mixture to create a solid shower gel.

iii. Talcum powder

These are the products that eliminate body odor.

iv. Body scrubs

These are the cleaning agents that eliminate dead cells.

Care-needs for Body

- Take a daily bath.
- Keep your system hydrated.
- Daily moisturize the skin.
- Wear clean dresses
- Consume a healthy diet.

Cleansing and care needs for underarms

i. Hair Removal

Shaving: Using the proper technique will get rid of stubble while avoiding ingrown hairs and any potential irritation. Keep in mind that the hair there might occasionally grow in different directions, so you might need to use more than one downward stroke when shaving. For smooth results and a close, comfortable shave, gently exfoliate the area before shaving and use a conditioning aftershave cream.

Waxing: While not the most enjoyable procedure, waxing is very effective and can keep you hair-free for weeks as opposed to days. To get rid of the everyday stubble, either do it at home if you are daring or seek the advice of a licensed esthetician or waxing specialist.

ii. Deodorants

A deodorant is a chemical applied to the body to stop body odor brought on by bacteria breaking down sweat in places like the feet, armpits, and other body parts. Antiperspirants, a subclass of deodorants, work on sweat glands to inhibit perspiration and reduce odor. Deodorants, which come in the form of body sprays, can also be applied to the feet and other places. Antiperspirants are typically applied to the underarms.

Deodorants frequently contain alcohol. Alcohol initially increases sweating but also has the potential to momentarily destroy microorganisms. Sodium stearate, sodium chloride, and stearyl alcohol are some of the other active components included in deodorants.

Formulation and consideration ethnics needs of cosmeceuticals like

Vanishing cream

Vanishing creams are referred called as such because they spread freely and appear to vanish quickly when applied to the skin. Emollient esters, the main ingredient in these lotions, form a thin film on the skin. Stearic acid is the base of the traditional formulas for disappearing creams. Stearic acid melts at temperatures higher than body temperature and crystallizes into an undetectable state, leaving a non-greasy layer. It also gives the cream a beautiful appearance. **Figure 2** has a common example of vanishing cream.

Table 2 indicates the ingredients used in the preparation of vanishing cream.

Procedure for preparation of vanishing cream

Stearic acid should be melted in a china dish over water. In a beaker, combine glycerin and potassium hydroxide for dissolution. In a water bath, heat the aqueous solution to 70°C. Add the aqueous phase to melted stearic acid while stirring continuously once both the aqueous and oily phases have reached the same temperature (70°C). When the temperature reaches 40°C, remove the china dish from the heat and continue stirring. Add the perfume and mix thoroughly until the mixture cools and a homogeneous cream is produced.

FIGURE 2 | Vanishing cream.

TABLE 2 | Ingredients in vanishing cream.

Sr.no.	Ingredient	Quantity
1	Stearic Acid	17%
2	Potassium hydroxide	0.7%
3	Glycerin	5%
4	Water	100%
5	Perfumes and preservatives	Q.S

Understanding and basic concepts

SOP of different types of machinery

Standard operating procedure for ball mill

1. **Figure 3** shows the Ball mill. For SOP first of all remove the cap off the vessel by removing the screw. that is located over both sides of the vessel and opening one side of the vessel.
2. Add the desired amount of ingredients and ball size to the container.
3. After adding the cap and tightening the screws on it, seal the vessel's mouth.
4. Connect the primary plug to the primary switch.
5. On the ball mill's ON/OFF switch, number.
6. When milling is finished, remove the blender's cap and take the sample out of the container.
7. Remove the main plug from the switch and clean it with a dry cloth after the practical.

SOP on operation of colloid mill

This standard operating procedure (SOP) is intended to establish a process for operating a colloid mill.

This process can be used to operate a colloid mill at a pharmaceutical production facility. **Figure 4** shows the colloidal mill used in the pharmaceutical industry.

Procedure

i. Make sure the area is cleaned according to SOP.
ii. Make sure the colloid mill's components are all cleaned under SOP.
iii. Be sure to remove the plug top from the socket and turn the mains off.
iv. By hand, turn the rotor to make sure it can travel freely.
v. Set the outer ring in position and rotate it in the opposite direction of the indication mark (scale to be set as per product requirement).
vi. Tighten the handles on the sides to secure the ring in place.
vii. Place the top ring and hopper first, then the food grade neoprene gaskets.
viii. Tighten the hopper's bolts.

FIGURE 3 | Ball mill.

FIGURE 4 | Colloidal mill.

ix. Turn on the mains and check the rotation's direction (the direction of rotation should be long the arrow marked on the body of the machine).
x. Repair the gasket and recirculation/outlets nozzle.
xi. Perform the line clearance following SOP, and document the action in the Annexure.
xii. Run a test with filtered water.
xii. Verify that there are no leaks or strange noises. Attach a "USE FOR" label to the machine along with the product name, the date, and the production officer's signature.
xiii. Feed the suspension or solution to be milled into the hopper, then turn the colloid mill "ON."
xv. Using the knob on the outflow nozzle, mill the solution or suspension in a single pass or many passes (recirculation) (as per product requirement). Verify how gritty the upcoming suspension is Use solvent or distilled water to rinse the colloid mill.
xvi. Turn the colloid mill "OFF."
xvii. Put a "TO BE CLEANED" sticker on the hopper along with the equipment number, the batch number, the date, and the production officer's signature.
xvii. Enter cleaning activities into the equipment and area's Cleaning and Usage Log in accordance with SOP.

Calibration

Colloid mill RPM is checked by an outside party once every 12 months.

SOP on molds

Procedure

- **Figure 5** indicates the lipstick molds. Handle the lipstick mold, tighten the screw.

FIGURE 5 | Lipstick molds.

- Place the mold with the liquid lipstick inside and chill for around 30 min.
- Separating the cooled paste from the mold requires moving in either the left or right arrow-pointing direction.
- The lipstick mold's screw has to be tightened.
- After adding the lipstick mixture to the mold, chill it for about 30 min.
- Use a lipstick tube to apply and remove the cooled lipstick.

Quality control test for lipstick preparation

Evaluation of lipstick

- Test to determine the melting point.
- Test for breaking load points.
- Characterization of thixotropic properties
- A microbial test.
- Check for oxidation.
- Examine the application force.
- Storage sturdiness.
- Resistance to oxidation.
- Identification of surface properties.
- Calculating color dispersion.

Melting point determination test

The melting point is calculated to determine the product's storage properties. To prevent the sensation of friction or dryness during the application, the starting point of the lipstick base should be between 60°C and 65°C. The measurement technique is called the capillary tube method:

- For this technique, approximately 50 mg of lipstick is taken and placed inside a glass capillary tube with two open ends.

- The capillary tube is inserted in a beaker with hot water and a magnetic stirrer after being ice-cooled for a few hours.
- The melting point temperature is the temperature at which a substance begins to pass through a capillary.
- The droop point, which establishes the temperature at which the product begins to leak oil and gets flattened, is another crucial factor.
- For the finished product to be handled and stored safely, the melting point must be greater than the droop point.

Hands-on instruments

Hands-on instruments depending on the type of cosmetic product (lipstick)

Texture analyzer

Lipstick is a molded, solid fatty basis that has a variety of technical requirements and contains colorants that are dissolved and suspended. The ability of the product to remain rigid during use is a crucial feature that users look for. Overall, texture research showed that lipstick based on 12-HSA was much more difficult to bend than the control, whereas other formulations become softer and more flexible for the stability study. In the end, the classification of lipsticks into two groups was possible thanks to sensory and instrumental evaluations. This study raises the possibility of using LMOGs as a structural component in lipsticks, opening the door to more environmentally friendly and photoprotective substitutes.

Methods

Measurements were made on the particle size, viscosity, spreadability, wetting, oil absorption, and color. Then, four of the nine dispersions–including all of the 30% pigment dispersions and the 40% dispersion with meadowfoam seed oil were created into lipsticks. Lipsticks were tested for 4 weeks for stability, color, hardness, payoff, friction, and rheology. **Figure 6** shows texture analyzer used in the evaluation test of lipstick.

Results

Across the dispersions, the average particle size was between 6 and 9 m. In comparison to the other dispersions, the castor oil dispersions were more viscous, stickier, and difficult to spread. Due to variations in the viscosity of the dispersion agents and the powder's ability to absorb oil, the lipsticks' varying hardness was to be expected. The hardest and most elastic lipsticks were made of castor oil and meadowfoam seed oil with 40% pigment. The softest lipstick was octyldodecanol. The lipstick containing 40% meadowfoam seed oil had the lowest friction, whereas the lipstick containing octyldodecanol had the highest payoff. The color of the lipsticks was pretty identical on the stick and the paper after spreading.

FIGURE 6 | Texture analyzer.

Experimental activity

Preparation and evaluation of lipstick

To meet women's desires, it was noted that lipsticks are marketed in a huge variety of colors.

Aim

Due to more adverse effects of synthetic preparation, the present investigation was done to formulate herbal lipstick, its objective of having minimal or no side effects.

Requirements ingredients

Coconut oil, cocoa butter, beeswax, beetroot juice or Bixaorelanna as a coloring agent.

Rose essence and vanilla essence as flavoring anent.

Instruments

Molds, water bath, weighing balance, beaker, china dish, mortar, and pestle.

Procedure

i The molding method was used to create the herbal lipstick.

ii Using a low flame, the mixture of all the ingredients was added to the existing cosmetic beeswax after being

TABLE 3 | Ingredients table for herbal lipstick.

Sr.no.	Ingredients	Quantity taken
1	Coconut oil	6 g
2	Cocoa butter	28 g
3	Beeswax	36 g
4	Beetroot juice	6 g
5	Bixaorelanna	6 g
6	Rose essence	0.1 ml
7	Vanilla essence	Q.S

crushed, dried, and powdered in a specific ratio with melted cocoa butter.

iii The molten mass finally took the shape of lipstick.

iv The prepared lipstick's color, smell, pH, melting point, breaking point, thixotropic properties, and stability were assessed.

Formulation of herbal lipstick

The formulation and preparation of the herbal lipstick was properly supported by data on the efficacy and general method of normal lipstick safety that were established in the scientific formulation. The literature refers to the ingredients used. The ingredients included coconut oil (6 g), cocoa butter (28 g), beeswax (36 g), beetroot juice (6 g), and Bixaorelanna (6 g) as coloring agents, as well as rose essence (0.1 ml) and vanilla essence in sufficient amounts. Herbal lipsticks are becoming increasingly popular.

The lipstick was made using the melting-molding technique. The components were combined in a beaker, dried to a semi-solid state in a predetermined ratio by melting cocoa butter, and then beeswax was added to the mixture over a low flame. The semisolid mass was then molded in the appropriate molds. In recent years, lipsticks have been created that many health watchers are closely scrutinizing. The entire process is carried out in a spotless and sanitary setting. **Table 3** shows in ingredients used in the formulation of herbal lipstick.

Evaluation of herbal lipstick

Users frequently nibble away at lipsticks. Maintaining consistency is crucial, so it is essential that herbal lipstick meet certain health standards. With this in mind, regulators take a close look at the formulation of the lipstick and assess its ingredients' stability, thixotropy, melting point, color, and other properties.

Evaluation tests for herbal lipsticks:

- Melting point test
- Breaking point test
- Thyrotrophic characteristics
- Force of application
- Surface anomalies
- Aging stability
- Solubility test
- PH parameter
- Skin irritation test

Evaluation tests for herbal lipsticks

Maintaining a uniform standard for herbal lipstick is crucial. With this in mind, the formulations of herbal lipsticks were assessed based on various factors, including melting and breaking points, thixotropy characteristics, the force of application, surface abnormalities, and others.

Melting point test

The limit of safe storage is indicated by the melting point, which must be determined. By filling a capillary tube and keeping it in a capillary apparatus, it was possible to determine the melting point of lipstick that had been specially formulated. At first, it was noted that the product was being milted slowly. It was occasionally noted that the product had totally melted. The aforementioned technique was carried out three times, and the melting point ratio was noted for each formulation.

Breaking point test

The breaking point test is used to gauge the durability of lipstick. It is held in a socket that is 12 inches from the support's edge, horizontally. The weight is increased incrementally by a certain amount (10 g) every 30 s, and the weight at which it breaks is regarded as the breaking point.

Thixotroic characteristics

It is an indication of the thixotropic quality and is done by using a penetrometer. A standard needle of specific diameter is allowed to penetrate for 5 s under a 50-g load at 25 C. The depth of penetration is a measurement of the thixotropic structure of lipstick.

Force of application

It is a test for comparing the force that will be used during application. Lipstick can be applied at a 45-degree angle to

FIGURE 7 | Herbal lipsticks.

cover a 1-square-inch area on coarse brown paper until it is completely covered. The pressure reading serves as a gauge for application force.

Surface anomalies

This is investigated by the surface flaws, such as the absence of crystallization on surfaces and the absence of mold or fungal contamination, etc.

Aging stabilities

The item was kept at 400°C for 1 h. Numerous criteria were noticed, including bleeding, surface crystallization, and ease of application.

Solubility test

The herbal lipstick's composition was to determine the solubility, dissolved in different solvents.

PH parameter

A pH meter was used to calculate the pH of the herbal lipstick formulation.

Skin irritation test

It involves putting a substance on the skin for 10 min.

Perfume stability

After 30 days, the formulation of the herbal lipstick was tested to capture the scent.

Figure 7 has an example of some herbal lipsticks.

Conclusion

As a result of the inquiry, it was determined that this formulation of herbal lipstick offers women a better option with few negative effects, though a thorough clinical study may be conducted to evaluate the formulation for greater efficacy.

Results

The information regarding the criteria used to evaluate lipstick was great, with the skin pH range being shown as being compatible with the skin and being stable under all test conditions.

References

1. Datta A, Rajamani RK. A direct approach of modeling batch grinding in ball mills using population balance principles and impact energy distribution. *Int J Mineral Process.* (2002) 64:181–200.
2. Esposito CL, Kirilov P. Preliminary study of the potential photoprotective effect of organogel-based lipstick formulations: application in cosmetics. *Gels.* (2021) 7:97.
3. CDSCO. *Guidelines on Recall and Rapid Alert System for Drugs*. New Delhi: Central Drug Standard Control Organization (2017).
4. Maktabi B, Liberatore MW, Gabriella B. Meadowfoam seed oil as a natural dispersing agent for colorants in lipstick. *Int J Cosmetic Sci.* (2021) 43:484–93.
5. Panda S, Dalapati N, Kumar Kar P. Preparation and evaluation of Herbal Lipstick. *Envirnment.* (2018) 5:6.
6. Mishra P, Dwivedi S. Formulation and evaluation of lipstick containing herbal ingredients. *Asian J Pharm Research.* (2012) 2:58–60.
7. Sakamoto K, Lochhead H, Maibach H, Yamashita Y. *Cosmetic science and technology: theoretical principles and applications*. Amsterdam: Elsevier (2017).
8. Sunil R, Shekhar TC, Ashutosh B. Formulation and evaluation of a herbal lipstick: A new approach. *Int J Pharm Erudit.* (2013) 3:26–30.
9. Sharma PP. *Cosmetics: Formulation, Manufacturing and Quality Control*. Lucknow: Vandana Publication (2014).
10. Sharma G, Gadiya J, Dhanawat M. *Text-book of Cosmetic Formulations*. Bengaluru: Mudranik Technologies (2008).
11. Balsam MS, Sagarin E. *Cosmetics: Science and Technology*. Hoboken, NJ: Wiley Publishing company (1972).
12. Knowlton JL, Pearce S. *Handbook of cosmetic science & technology*. Amsterdam: Elsevier Science (1993).
13. Stable Micro Systems. *Texture analyzer of lipstick*. Godalming: Stable Micro Systems (2014).
14. Hibbott H. *Handbook of cosmetic science: an Introduction to Principles and Applications*. Amsterdam: Elsevier Science (1963).
15. Bajpai S. *Import License of Drugs and Cosmetics in India*. Noida: Corpbiz Advisors (2020).
16. Singh J. *SOP for Handling of Returned Goods /Materials*. Noida: PharmaState Academy (2022).
17. Corpbiz Advisors. *Penalties under Drugs and Cosmetics Act 1940*. Noida: Corpbiz Advisors (2022).
18. WHO. *SOP operation of colloidal mill*. Geneva: WHO (2020).