

# Formulation and Evaluation of Antimicrobial Herbal Cream from *Merremia Dissecta* extract

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## Abstract:-

Our primary goal is to create a herbal cream that nourishes the skin, lessens skin irritation, and has antibacterial properties. We create a safe and effective herbal cream that protects and nourishes the skin. We use the natural extract of *Merremia dissecta* as the main ingredient. After mixing it, we developed the cream and conducted an evaluation study.

*Merremia dissecta* leaves have been demonstrated to antimicrobial antifungal antioxidant Properties Containing active ingredient like alkaloid, carbohydrate, amino acid, glycoside, tannin, saponins and the Cyanogenic glycosides is a quality feature of *Merremia dissecta* plant.

The main purpose of study was formulated the herbal cream containing *Merremia dissecta* extract to emphasize the importance of involving natural ingredients in pharmaceutical products instead of synthetic ingredient the significance of this study can be clearly seen due to the fact that now a days there are lots of cream available in market with synthetic chemical ingredients which can cause harmful effects herbal extracts that has good effect on skin like antimicrobial, anti inflammatory, antifungal and antioxidant.

**Key words :-** *Merremia Dissecta*, Herbal Cream, Antimicrobial, Cynogenic glycoside

## Introduction:-

Numerous plant species can be found in India. Numerous medicinal plants have long been acknowledged and used by indigenous people for their therapeutic properties. Bioactive substances produced by medicinal plants are mostly utilized for therapeutic purposes. Phytochemicals' antipyretic, Antibacterial, and antioxidant properties may be responsible for plants' therapeutic benefits(1). Indian Folk medicine consists of 100 herbal prescriptions for medicinal purposes that are used to Relieve illness, and Indian flora is widely used as a source of various medications specified by several Ethnic committees (9).In addition to this issue, antibiotics have been linked in some cases to harmful effects on the host, such as hypersensitivity, immunological suppression, and allergic reactions. The challenge forced scientists look for novel and safe antimicrobial substances (1). Medical plants were employed for both ritual And therapeutic purposes. There are several botanical medications for which synthetic versions are Currently unavailable. For the great majority of people on the planet, medicinal plants are the primary Source of life-saving medications, even though they are also consumed directly as food, fiber, and Medicine. According to the most rigorous definition, phytochemicals are compounds produced by plants. The Presence of numerous secondary metabolites, including alkaloids, flavonoids, Glycosides, phenols, Saponins, and sterols, may be responsible for the therapeutic properties of medicinal plants. India's diverse agroclimatic conditions result in an abundance of medicinal plants. An estimated 2,500 powerful plant-based formulations are used in folk medicine and are well-known to Indian populations, while a further 10,000 formulas can be found in endogenous medicinal books. All over India, with another 10,000 formulations available in endogenous medicinal Texts(4). Knowledge of the chemical components of plants is necessary and crucial not only for the development of new medicinal uses but also for the use of financial resources like oils and tannins, which can be used to open up new sources of precursors for the synthesis of complex chemical compounds. 80 % of people depend on

traditional remedies, such as using plant extracts or the active components found in plants, according to the World Health Organization. The primary source of pharmaceutical drugs and activators used in traditional medications is still plant components (13).

## **Merremia Dissecta :-**

Merremia dissecta is a member of the Convolvulaceae family of morning glory flowering plants, which includes about 58 genera and 1650 species of herbs, climbers, and shrubs found in tropical and subtropical climates. The family's corollas are radially symmetrical and take the shape of a funnel; Some species have edible leaves and tuberous roots, and their seeds are used as purgatives in medicine. The morning glory family contains a variety of bioactive substances, such as flavonoids, coumarins, steroids, terpenoids, alkaloids, and polyketides. Among other substances, cyanogenic glycosides(3,5). The ergoline alkaloids found in certain species are probably what give them their usage as Ingredients in psychiatric drugs (5). There are many divisions within the genus Merremia Dissecta(Jacq.)Hall worldwide. Before moving to Florida, Mexico, and eventually the rest of the world, Merremia dissecta was first discovered in the Caribbean. Historically and today, a variety have been used as food, medicine, and ornamental by a wide range of cultures. The pharmaceutical sector makes extensive use of medicinal plants due to their high level of phytoconstituents (3). All The plant has escaped and Become a weed in certain areas; yet, it is still sold as an ornament in those areas. Merremia dissecta Var. Edentate roots are still consumed by a small number of indigenous tribes in Argentina. The herb is cultivated and used in conventional medicine. The herb is cultivated and used in conventional medicine. The plant contains a variety of bioactive compounds, particularly Glycosides, alkaloids, Tannins, saponins, phenols, and flavonoids (5). All ethanolic extracts of Merremia Dissecta contained Primary phytochemicals such as carbohydrates, reducing sugar, fixed oil and lipid, starch, hexose Sugar, amino acids, and secondary phytochemicals such as betacyanin, Flavonoids, Triterpenoids, tannins, cardiac glycosides, cyanogenic glycosides, and saponins. The existence of Cyanogenic glycoside is one trait of Merremia dissecta (3). The phytoconstituents reflect Pharmacological activities And have been reported as antibacterial, antifungal, antipathogenic, anticancer, antidiabetic, Antiasthmatic, and antihyperlipidemic. The leaf extract of this plant is Beneficial against snakebite Venom (3,5).In folk medicine, the leaves and juice are used as sedatives and to treat urinary tract Infections. The plant is also useful for treating skin disorders. Boiled tubers are traditionally used to treat chest ailments, inflammation, UTIs, snakebites, sprains, and scabies (8). Merremia dissecta (Jacquin) Hallier f. A common plant found in the hedges that encircle the towns. Kali Aphumari is another name for it(1). Merremia dissecta grows into a perennial herbaceous vine when Its development is insufficient. It is a huge perennial slender twiner (5). The leaves are palmately split into five-seven pinnately lobed Segments; the center segment is larger than the other segments; the Petiole is smaller than the blade; and penducles are axillary. 1-4 flowers, pedicel 2 cm long, thickened at the apex, calyx 1.8-2 cm long, subequal lanceolate, acute, expanded, and coriaceous in fruit. The fruit is a globose capsule, the corolla is funnel-shaped, purple at the neck, pink with five distinct bands, and the stamens are uneven. The filament is dilated at attachment. Four seeds, black glabroth. Flowers and fruits bloom all year (9). Leaves was used for food flavour and it used as a tea for relieve from cold flu (14). Dazeil reported that a cold infusion relieved giddiness and is used to treat chest issues in young kids. Roig claimed that Infusions of crushed leaves were used to treat chest conditions, reduce inflammation, and act as emollients and sedatives simultaneously. Morton was given a hot infusion to treat bladder infections. Mansur discovered that Merremia dissecta was used to cure snakebite and Drowsiness in Africa. How thorne et al. Discovered that the herb was used to cure sprains. D. Phillips wrote that the extract of the plant was believed to be an excellent external cure for scabies and itching. Ved et al. reported that the herb was employed in folk medicine in three agroclimatic regions of Andhra Pradesh in India. Merremia dissecta is

not used in the Ayurveda or Unani systems, indicating that it was just recently introduced to medicine, as one would expect for a relatively new plant (2).

### **Antimicrobial activity of Merremia Dissecta:-**

The antimicrobial activity of Merremia dissecta's aqueous extract was estimated. It was discovered that the extract worked well against both gram-negative bacteria, such as *Pseudomonas aeruginosa*, and gram-positive bacteria, such as *Staphylococcus aureus*. A second study was conducted to look at Merremia Dissecta's antibacterial properties. We used petroleum ether, chloroform, benzene, acetone, and ethanol to test the antibacterial properties of the leaves. Among all the pathogens (*S. Typhi*, *P. vulgaris*, *B. subtilis*, *E. aerogenes*, and *Mirabilis*), the ethanolic extract performed the largest zone of inhibition (3-5).

Additionally, Merremia dissecta exhibits antibacterial efficacy against six distinct microbial strains. The antibacterial activity was found against four types of bacteria: *Bacillus subtilis*, *Escherichia coli*, *Bacillus thuringiensis*, and *Pseudomonas putida*. Merremia dissecta shows effectiveness in fighting against two types of fungi: *Candida albicans* and *Aspergillus niger* (13).

### **HERBAL COSMETICS:-**

A natural component found in skin care products that preserve the skin's elasticity, health, texture, and integrity as well as moisturize it (11). Herbal formulations are gaining more attention in the public due to their high quality properties and fewer side effects (6). Herbal cosmetics are seen as the top choice today since more people are focusing on looking good and having healthy skin. This improvement in looks helps increase confidence, happiness, and appeal. Herbal cosmetics are highly valued and in high demand on the international market (10). Natural products are believed to have fewer adverse side effects than those that contain synthetic components. The word "herbal" highlights safety. In contrast to synthetic products, which are harmful to human health. Cosmetics such as colognes, Gels, moisturizers, and lotions are used every day by both men and women (11).

### **CREAMS:-**

The function of skin cream is to protect the skin from various environmental conditions and bacterial skin infections, as well as to maintain healthy skin, provide antimicrobial protection, and nourish the skin (10). Creams are semisolid dosage forms that are applied topically to the skin, on the surface of the eyes, or through the nose, rectum, or vagina for cosmetic or preventative medicinal reasons. To produce a cleaning and softening effect, face creams are applied topically. Creams are classified into numerous sorts, such as cleaning, night, cold, hand, vanishing and body massage, and foundation creams(11).

### **HERBAL CREAM:-**

Herbal creams are mixtures that have both oil and water (11). It also gives the skin important nutrients and hydration. Herbal creams that can be used to moisturize, minimize acne and skin irritation, and treat skin diseases such as eczema, psoriasis, dry skin, wrinkles, and rashes, as well as provide a glow to the face (6).

### **Types of herbal creams :-**

There are two categories in it:

#### **A) Creams that contain oil in water (o/w):**

Cosmetic creams such as foundation and vanishing creams (6) are examples of oil-in-water (o/w) emulsions, which are defined as emulsions with oil droplets scattered throughout the aqueous phase, whereas oil-in-water (o/w) creams are defined as creams made up of tiny oil droplets dispersed over a continuous phase (11).

**B] Creams that contain water in oil (w/o) :**

Water-in-oil (w/o) creams are creams that have water and oil mixed together in a single phase. An emulsion is called a water-in-oil (w/o) type when oil is the main liquid and water is mixed in (11). The most widely used cosmetic delivery technique is water-in-oil (o/w) creams, which create an occlusive barrier to improve skin condition and provide hydration (10). For example, winter creams like moisturizing or cold creams. Cleansing milk, cleansing lotion, cleansing creams, all-purpose creams (6).

**Ideal properties of herbal creams include:-**

- 1) Good penetration ability, which allows the drug in the cream to enter into the skin and produce the desired effect.
- 2) It should not be harmful in order to avoid unwanted skin reactions like itching, rashes, or redness.
- 3) When applied, it should spread uniformly all over the skin.
- 4) When applied to the skin, it should melt or become liquefied to body temperature.
- 5) It ought to apply to the skin with ease.
- 6) It ought to be attractive.
- 7) They must not be oily or non-staining.
- 8) They should not change membrane and skin function.
- 9) They should produce flushing action on skin and it's pore opening (6,10,11).

**Advantages:-**

- 1) Application simplicity.
- 2) Simple to use.
- 3) Minimize drug level changes due to intra- and inter-patient variability.
- 4) Excellent patient adherence.
- 5) They are easy to wash and clean (11).

**Limitations:-**

- It is mainly useful for medications that need very low plasma concentrations to function properly.
- Raises the risk of allergic reactions.
- It is more difficult for larger drug particles to. Get through skin pores.

## Plant profile:-

Figure:- *Merremia Dissecta* (jacq.) Hallier



### Botanical study :-

Kingdom:- Plantae

Subkingdom:- Tracheobiata

Super division:- Spermatophyte

Division:- Magnoliophyta

Family:- Convolvulaceae

Class -: Magnoliophyta

Sub class -: Asteridae

Order -: Sonanales

Species -: *Merremia dissecta* (Jacq.) Hallier

Genus:- *Merremia* Dennst ex. Endl.

### Common name :

- Noon flower
- Cut-leaf morning glory
- Bindweeds
- Snake vine
- Noyau vine(14).

### Scientific synonym of *Merremia Dissecta* :-

- *Convolvula* Convolvulaceae Jacq
- Convolvulaceae palmate Mill
- *Ipomoea dissecta* (Jacq.) Pursh

- *Ipomoea subpedala* Desf.
- *Operalina dissecta* (Jacq) House
- *Merremia dissecta* var. *Cho coenesis* o'Donell

**Vernacular name:-**

- **Marathi:-** Kali aphumari ,Nagin
- **English:-** Alamovine

**Flowering:** November – February

**Fruiting:** December – March

**Ecology :** Located in arid regions (12). It will grow in a sunny and a little shaded location (14).

**Geographical Distribution of Merremia Dissecta :-**

*Merremia dissecta* is found all over the world and originally comes from tropical and subtropical areas. In India, Sri Lanka, Myanmar, China, Pakistan, Indonesia, the Philippines, Australia, France, Polynesia, Papua, New Guinea, the Solomon Islands, Samoa, Tonga, and the Seychelles (21).

**Morphology:-**

**1)Leaves:-** The alternative leaf arrangement measures 10 cm in length. The palmate leaf blade has an acuminate apex and edges that range from sinuate to denate (5). The leaves are alternating, spiral, Simple, and Have a very hairy petiole that is 2-7cm long (3). Perennial, slender twiner 3-6 m long, plainly hirsute with yellow hairs, mature woody, glabrescent, and warty (7). The leaf blade typically measures 4-8cm long and 6-12cm wide (3). The leaves have an almond-bitter scent (1).

**2)Flowers:** Bracts deciduous calyx has five unfused sepals, whereas actinomorphic flowers are solitary or in cymes. The corolla tubular campanulate has five united petals. These five stamens are united to the neck of the corolla tube. The ovary is superior, with two locules and three to five seeds. Attention is drawn to the red-centered white flowers (1). Flower buds are narrowly avoided, with an acute pedicel 1.5-2cm long, sub-equal sepals 2-2.5 cm long, and peduncles 5-10cm long (7).

**3)Capsule:** globose or depressed-globose, 14 mm in diameter, 2-valved, with two or four seeds, Enclosed by the persistent calyx (22).

**4)Fruit :-** The fruit matures into a subglobose glabrous capsule (3-5). Woody and dry sepals support the fruit (5). Fruiting sepals are persistent, recurved upon drying, and have a brownish-black Color. Fruits are capsular, globose, valvular, dehiscent, and light brownish (12)

**5)Stem:-**The adult portion is woody, glabrescent, and warty, while the stem is clearly hirsute with yellow hairs(7).

**6)Seed:** They are dried and have a black colour (3). Oval in shape, glabrous and matte black, generally Four, rarely less (12). Trigonal or depressed, glabrous, 8 mm Wide, 10 mm long (22).

## Discovery and Distribution:

Between 1755 and 1759, Nicolaus Joseph von Jacquin made the discover Of the vines that are now known as Merremia dissecta in the Caribbean. In 1767, he released a work called Observationum Botanicarum, where he identified the plant as Convolvulus dissectus. Either unaware of Jacquin’s work or failing to recognize that the plants were the same species, Philip Miller (1768) Named them Convolvulus palmatus the next year. In 1773, William Bartram found the species in northern Florida (Bartram 1943; Harper 1958). Bartram and Jacquin both depicted the species. Jacquin failed to document the island where he arrived. The seeds that form the basis of the drawing he published were later planted in the capital city of Austria. Neccurrit certus Collectionis loci, which translate to “without occurring in any particular collection,” is what he wrote. Conversely, Bartram found the plants. In northern Florida’s present-day Putnam and Levy Counties (Harper 1958).Veracruz, Mexico, is where Miller’s specimen originated (McDonald 1993). Researchers later found the same species in Georgia (Michaux 1803; Pursh 1814), Cuba (Ortega 1798), and in various other places across the Americas. These vines are now found all throughout the world and have established themselves as natives in Many locations(15).

## Material and method:-

**Collection of plant:-** The plant of Merremia dissecta (jacq) Hall was collected from local area of Borkund, Taluka: Dhule , District : Jalgaon (Maharashtra).

### Drying and pulverization of the plant material:-

The plant leaves were washed with distilled water and dried on a pharmacognosy laboratory table for 2-3 days at the Aditya Institute of Pharmacy, Chalisgaon, Jalgaon. After drying, the leaves are crushed in a mortar and pestle and made into a powder.

### Extraction:-

A sample of the dry powder of Merremia dissecta will be extracted using a Soxhlet apparatus.

The powder of leaf material was properly extracted with the methanol as a solvent for 24 hours.

### Excipients Profile:-

- 1) BEES WAX:- Emulsifier and thickener
- 2) METHYL PARABEN:- Preservative and Anti bacterial agent
- 3) BORAX:- Buffering agent and preservative
- 4) LIQUID PARAFFIN:- Moisturizing agent and Skin softner.
- 5) ESSENTIAL OIL (ROSE OIL):- Fragrance and Glowing skin

**Test Microorganism :-**

The microorganisms studied were:

**Bacteria:**

1. Gram-positive bacteria: Staphylococcus aureus
2. Gram-negative bacteria: E. coli

**Phytochemical Analysis:-****Detection of carbohydrates:-**

Molish's Test:- A few drops of concentrated  $H_2SO_4$ , 2 ml of extract, and 1 ml of Molish's reagent were added. Carbohydrates create a purple or reddish ring.

**Detection Of Amino acids:-**

Ninhydrin Test: The sample was heated for 10 minutes in a boiling water bath with 2 milliliters of a 5% ninhydrin solution. A purple color showed that amino acids were present.

**Detection of Alkaloids:-**

Alkaloids were detected by transferring a little amount of solvent-free alcoholic extract into three test tubes, stirring it with a few drops of dil. HCl, and then filtering it.

The following alkaloid reagents were used to evaluate this filtrate:

- a. Mayer's reagent produced a cream-colored precipitate;
- b. Dragandroff's reagent produced an orange-brown precipitate;
- c. A yellow precipitate is produced by Hager's reagent.
- d. A reddish-brown precipitate is produced by Wagner's reagent.

**Detection of Glycosides:-**

1. **Liberman Burchard's Test:** A small sample of the extract was broken down using diluted hydrochloric acid in a water bath set to  $50^\circ C$  for about an hour. In order to identify the presence of glycoside, the hydrolysate was additionally placed through Liberman-Burchard's test. Glycosides are present when a violet to blue to green reddish brown ring forms.

2. **Cynogenic glycoside :** sodium picrate test: The filter paper was first soaked in a 10% picric acid solution before it was allowed to dry. After that, it was soaked in a 10% sodium carbonate solution. The dry filter paper was then added to the beaker with the sample from the cut that had been corked. When the filter paper turns brick red or maroon, it indicates the presence of halcone glycoside.

**Detection of Tannins:-**

Tannins were detected by adding a little amount of alcoholic extract that had been taken separately in water to a 5% diluted ferric chloride solution. The formation of a black or green color showed the tannins were present.

**Detection Of Steroids:-**

Mix 10 ml of chloroform with 20 milligrams of plant material. Thoroughly mix the ingredients and then filter the mixture. After that, take a test tube and add 2 ml of the filtered liquid along with 2 ml of dry acetic acid. A tiny amount of concentrated  $H_2SO_4$  should now be added sideways to the test tube. Steroids are indicated by a blue-green ring.

**Detection of saponins:-**

In a graduated cylinder, 1 milliliter of distilled water was added to 1 gram of alcoholic and aqueous extract while being continuously shaken until a volume of 20 milliliters was obtained. The combination was mixed thoroughly for 15 minutes. You can see that saponin is in it because a layer of foam about 1cm thick appears on the surface.

**Detection Of Phytosterols:-**

1% potassium hydroxide solution was used to treat the alcoholic extract until full saponification occurred. Mix together 5 milliliters of distilled water, 5 milliliters of ether, and 5 milliliters of the extract you've prepared. Liberman Burchard's reagent is used to examine the ethereal extract after it has been thoroughly shaken and allowed to evaporate to half its volume. The brown-colored solid shows that phytosterols are present.

**Preparation of cream:-**

In a china dish, warm liquid paraffin and beeswax to  $75^\circ C$ . This temperature is called the oil phase. At the same time, in a different dish, mix borax and methylparaben in distilled water. The resulting clear solution, known as



the aqueous phase, is obtained by heating the beaker to  $75^\circ C$ . To avoid lumps, slowly mix this liquid phase into the oil phase using a mortar and pestle, making sure to stir in just one direction. Next, thoroughly combine the



cream base with the *Merremia dissecta* extract. After that, thoroughly mix all the components and add a few drops of rose oil for scent.

**Formula: Table No. 1: Preparation of herbal creams**

Sr.no.	Ingredients	Uses	Quantity
1.	Merremia dissecta extract	Antimicrobial activity	5.5ml
2.	Beeswax	Thickener, Emulsifier	7 gm
3.	Liquid paraffin	Moisturizing agent	10.5ml
4.	Methyl paraben	Preservative	0.3gm
5.	Borax	Buffering agent	0.7gm
6.	Rose oil	Fragrance, Glowing skin	4-5drops
7.	Distilled water		Q.S.

**Evaluation Parameters:-**

**Organoleptic characteristics:**

- **Physical Properties:** The herbal cream's color, odor, and look were visually assessed, and the results were recorded.
- **Homogeneity:** We checked the formulations for homogeneity by using our sense of touch and looking at their appearance.
- **Appearance:** The cream's appearance was assessed using the pearl sense and roughness and rated. We evaluated how smooth, slippery, and how much leftover cream stayed after using the recommended amount (16).
- **Consistency:** The formulation is evaluated by manually rubbing the cream on the hand. The consistency of the cream is smooth. After using the cream, there should be no greasy residue on the skin's surface.
- **State:** The cream's condition is visually assessed. The cream must be semi-solid.
- **pH:** You can check the pH of the finished herbal cream using a digital pH meter. The cream solution should be prepared with 100 ml of distilled water and then allowed to sit for two hours. Three pH readings should be taken in order to get the solution's average value.

- **Irritation test** :Mark the 1 cm<sup>2</sup> region on the left-hand dorsal surface to indicate irritation. After applying the cream to the area, the time was recorded. After a while, any erythema, edema, or irritating effects are checked for and reported(19).
- **Spreadability Test** : The cream's spreadability indicates its ability to cover a large area of the skin. This is crucial for its efficacy. To test, we placed 3 grams of cream between two glass slides and pressed to form a thin, equal layer. We applied pressure by placing a 1000-gram weight on top for 5 Minutes. Next, we added 10 grams to a pan and pulled the highest slide using a line linked to a hook. We measured the time it took for the slides to move apart by 10 cm under stress. The spreadability was determined using the formula  $S = m \times L/T$ .

Where ,

S – Spreadability

M – The force applied on the top glass slide

L – The distance traveled on the glass slide

T – Time taken (20).

- **Washability** : After applying a little amount of cream to the hand, tap water was used to wash it (18).

### Antimicrobial Test :-

The antibacterial activity of different formulations against both gram-positive and gram-negative bacteria was evaluated using the traditional agar well diffusion method. The agar medium was prepared and sterilized using an autoclave at 121°C, 15 lb pressure for 20 minutes. The molten agar media was then aseptically transferred with gram-positive (*Staphylococcus aureus*) and gramnegative (*E. coli*) bacteria separately under the laminar airflow bench. The inoculated agar media was then immediately poured into sterile petri plates and allowed to solidify. A sterile 6 mm bore was employed to make wells in the correct spots on petri plates. After diluting the creams and applying them to the wells, the petri plates were set aside to allow the sample to diffuse through the agar medium. The plates were maintained at 37°C for an entire day. Following an incubation time, each well displaying inhibitory zones beneath and surrounding cups or wells had their zones measured in millimeters using a ruler (16).

### Result and discussion:-

- A) This study examined the existence of medicinal active chemicals in an extract from *Merremia Dissecta* leaves. The existence of active chemicals in a table no. 2 was shown by the phytochemical Screening of the plant under study.

**Table no. 2 :- Phytochemical Screening**

Test name		Present /absence
Carbohydrates	Molish's Test	++
Amino acids	Ninhydrin Test	+
Alkaloids	Mayer's reagent	++
	Dragandroff's reagent	+
	Wagner's reagent	+
	Hager's reagent	+
Glycosides	Liberman Burchard's test	++
	Cynogenic glycoside test	++
Tannins		+
Steroids		+
Saponins		++
Phytosterols		+

B) This study focused on creating and evaluating a herbal cream. Creams are evaluated based on color, Consistency, pH, spreadability, viscosity, stability, washability, and skin irritancy tests. The results were Given in table no 3.

**Table no. 3:- Evaluation parameters**

Sr. no.	Parameters	Results
1.	Color	Yellowish white
2.	Odour	Characteristics
3.	Appearance	Semisolid
4.	Homogeneity	Yes
5.	Consistency	Smooth

6.	State	Semisolid
7.	pH	5.6
8.	Irritation test	Non Irritant
9.	Spreadability	Uniform
10.	Washability	Washable

### C) Antimicrobial activity :-

We checked how well the herbal cream we created fights germs by using the agar well diffusion method. We used two types of bacteria: gram-positive (*Staphylococcus aureus*) and gram-negative (*E.Coli*). The zone of inhibition was determined and displayed in a table no 4.

**Table no. 4:- Zone of inhibition of microorganism**

Sr. No.	Microorganism	Zone of Inhibition
1.	<i>Staphylococcus aureus</i>	7.5mm
2.	<i>E.coli</i>	9mm

**Conclusion :-** The above studies demonstrate that herbal creams containing extracts from *Merremia Dissecta* are formulated with cream bases. The objective of this study was to create a herbal cream that had good antimicrobial activity and no adverse reactions or side effects, and that was characterized by a number of parameters, including pH, appearance, phase separation, and spreadability. The developed herbal cream demonstrated good antimicrobial and antibacterial activity.

**Future Prospective:-** On the basis of Result and Discussion, it was possible to conclude that the herbal cream containing a *Merremia dissecta* extract displayed a promising formulation for future use.

**Reference:-**

1. Ridhi joshi , shikha agarwal et.al. published on dated 01 june,2015 vol 6(6), 2477-2483 : Evaluation of anti- microbial activity of In vitro and In vivo plants parts of Merremia Dissecta and Merremia Aegypta : International Journal of Pharmaceutical Science and Research.
2. J. B. Devhade et.al. published on dated jan 2015 volume 4 : Preliminary Phytochemical Analysis of Merremia Dissecta (JACQ) Hall a Member of Convolvulaceae : International journal of chemical and physical sciences.
3. Ms. Ranjita Krishna Das et.al. published on dated December 2023, volume 11, Issue 12 : A Review on Pharmacological Use and Phytochemical Screening of Merremia Dissecta : International Journal of All research education and scientific methods.
4. Ridhi Joshi et.al. published on dated 30 December 2017 volume 7(1), 679-684 : Comparative phytochemical analysis of bioactive constituents present in in vitro and in vivo plants parts of Merremia aegyptia and Merremia dissecta : Journal of Pharmacognosy and Phytochemistry.
5. Antara Sadashiv Maske et.al. published on dated 20june 2022 volume 11, Issue 7, 1001-1010 : A Review on Pharmacological Uses of Merremia dissecta : world journal of Pharmacy and pharmaceutical sciences.
6. Muggu Sankara Bhavani et.al. published on dated 15 December 2023 volume 83, Issue 2 : Formulation and Evaluation of Herbal Face Cream : International Journal of Pharmaceutical Sciences Review and Research.
7. J.L.C.H. van Valkenburg and N. Bunyapraphatsara (Editors) : Medicinal and poisonous plants 2, No. 12(2) : Plant Resources of South-East Asia: [https://www.researchgate.net/profile/Johan-Van-Valkenburg/publication/40218702\\_Medicinal\\_and\\_poisonous\\_plants\\_2/links/58f7272aaca2723d16a9a95f/Medicinal-and-poisonous-plants-2.pdf](https://www.researchgate.net/profile/Johan-Van-Valkenburg/publication/40218702_Medicinal_and_poisonous_plants_2/links/58f7272aaca2723d16a9a95f/Medicinal-and-poisonous-plants-2.pdf)
8. Abdel Karim et.al. published on 2021, volume 8(1),140-145 : GC- MS Analysis, Antimicrobial and Antioxidant Activity of Sudanese Merremia dissecta (Convolvulaceae) Oil : The pharmaceutical and chemical journal.
9. Syed Sabiha V : published on dated January 2015, volume 6(1), 54-58 : Critical evaluation of the potent antidiabetic drug plant *Gymnema sylvestre* (Retz) R. Br. Of Asclepidaceae and *Merremia Dissecta* (Jacquin) Hallier f. of Convolvulaceae : <http://biosciencediscovery.com>
10. Rahumana Tazeen et.al. published on dated 7 july 2024, volume 9, Issue 7 : Formulation and Evaluation of Herbal Cream : International Journal Of Novel Research And Development ([www.ijnrd.org](http://www.ijnrd.org)).
11. Jayita Roy et.al. published on 7 july 2024, volume 14, Issue 7 : Herbal Creams: An Overview : International Journal of Health Sciences and Research ([www.ijhsr.org](http://www.ijhsr.org)).
12. Undirwade D.N. and Bhadane V. V. : published on 2016, volume 1, Issue 7 : New additions to the Flora of Jalgaon District (I),Maharashtra A Peer Reviewed and Indexed Scientific Journal (<http://ijsi.co.in/>).
13. Jawad Ahmad et.al. published on January 2022, volume 1, Issue 1, 23-33 : Qualitative Phytochemical Screening of *Merremia dissecta* (Sepals and fruits) : *Phytopharmacology Research Journal (PRJ)*.

14. G. Sabareeshwari et.al. published on dated 20 December 2022, volume 5(4), 53-64 : Larvicidal Activities of *Merremia dissecta* (Jacquin) Hallier f. and *Peltroforum pterocarpum* (DC.) Backer ex k. Heyne Leaves against *Aedes aegypti* (Diptera: Culicidae) : Asian Journal of Research in zoology.
15. Daniel F. Austin: published on 2007, volume 61(7), 109-120 : *Merremia dissecta* ( Convolvulaceae): Condiment, Medicine, Ornamental, and Weed- A Review : The BioOne Digital Library (<https://bioone.org/>).
16. Gyati Shilakari et.al. published on dated 15 April 2024, volume 84(4), 84-91 : Antimicrobial Activity of Cream Containing Polyherbal Extract: Development, Formulation and Evaluation : International Journal of Pharmaceutical Sciences Review and Research.
17. Deepa V. et.al. published on dated 24 November 2022, volume 12(2) , 156-167 : Formulation and evaluation of topical anti-microbial herbal cream : World Journal of Biology Pharmacy and Health Sciences.
18. Chanchal Sandeep Sable et.al volume 2, Issue 6 : Formulation And Evaluation Of Herbal Antimicrobial Cream Containing Fennel, Coriander And Cumin Extract : International Journal of Pharmaceutical Sciences.
19. Shinde Avinash B. et.al. volume 2, Issue 3 : A Review Formulation And Evaluation Of Antimicrobial Cream : International Journal of Pharmaceutical Sciences.
20. Kalyani Khairnar et.al. published on dated 15 june 2024, Vol 2, Issue 6, 727-733 : Formulation And Evaluation Of Herbal Cream Containing Curcumin From *Curcuma Longa* : INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES.
21. G. W. Staples : volume 61(2): checklist of *Merremia* (Convolvulaceae) in Australasia and the Pacific : [https://www.researchgate.net/publication/311667662\\_A\\_Checklist\\_of\\_Merremia\\_Convolvulaceae\\_in\\_Australasia\\_and\\_the\\_Pacific](https://www.researchgate.net/publication/311667662_A_Checklist_of_Merremia_Convolvulaceae_in_Australasia_and_the_Pacific).
22. Othman Saad Saeed Al-Hawshabi : published on April 2016 , volume 11, Issue 2 :A New Alien Record for the Flora of Yemen: *Merremia Dissecta* (Jacq.) Hallier F.(Convolvulaceae) : IOSR Journal of Pharmacy and Biological Sciences (IOSR-JPBS).