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Pharmacognostic Study, Extraction, Formulation and Evaluation of Polyherbal Gel

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ABSTRACT-

Customers have shown interest in substances produced from plants and herbal medicine since they contain bioactive components and have the fewest adverse effects. Tridax procumbens is a great anti-inflammatory and wound-healing medication. Murraya Koenigii, the other active medicinal ingredient in this formulation, has the capacity to exhibit anti-inflammatory properties. In light of these considerations, we created poly-herbal gel. The crude drug was extracted and evaluated. The formulation was made using the hydro-alcoholic extract. Once the polyherbal formulation was finished, its physicochemical properties—such as color, pH, consistency, and spreadibility—were assessed. The formulation's stability was assessed throughout a range of temperature conditions, and neither the irritancy nor the spreadibility changed.

Keywords: Tridax Porcumbens, Murraya Koenigii, Topical Gel, Polyherbal Gel.

INTRODUCTION –

The term Polyherbal Gel indicates that it contains more than two medications. The two herbs included in this polyherbal mixture are Tridax procumbens and Murraya Koenigii, which are well-known for their anti-inflammatory and antioxidant properties. Conventional Both industrialized and developing countries rely significantly on herbal treatments for both essential and prescription medications. There has been a lot of interest in drugs made from plants because of the belief that they are secure, safe, and have few negative effects. According to a study of the literature, traditional plant medicines can aid with crack repair and a number of skin-related issues. Because traditional medicines are more readily available, less expensive, and more comprehensive—especially in poor nations—the World Health Organization (WHO) and our nation have been encouraging their use.

The greatest thing about taking herbal medications is that they may be used by people of any age and have either ineffective or beneficial effects. Extracts from Murraya Koenigii (curry leaves), a member of the Rutaceae family, and Tridax procumbens L., a member of the Asteraceae family, have been utilized in several investigations.

More than 80 percent of people worldwide continue to employ conventional treatments for a range of skin disorders. Cleaning, debridement, and generating a wettish surface are all part of herbal treatments for crack care, which help to create the perfect environment for the natural healing process. According to literature, a number of skin-related issues can be effectively treated with basic traditional stores (Adhatoda vasica, Boerhaavia diffusa, Caesalpinia sappan, Curcumalonga, Cyperusrotundus, Epitaalba, Glycyrrhizaglabra, Gymnema sylvestre, Oryza sativa, Piper longum, Plumbago zeylanica)

The current study examined the presumed component or parts of active extracts of Calendula officinalis (flowers), Murraya Koenigii (leaves), Tridax procumbens (whole factory), and Aloe barbadensis (leaves) prepared as an ointment product. Pharmaceutical extrudability, swelling indicator, and washability were used to describe the formulations.

Drug used-

1) Tridax procumbens:

ACTIVITY FOUND:

1. Antiviral
2. Anti-oxidant
3. Antibiotic
4. Insecticidal
5. Anti-inflammatory

6. Hair Tonic
7. Anti-Diabetic
8. Anti-Fungal

Kingdom- Plantae
Family- Asteraceae
Genus- Tridex
Species- T. Pro umbens
Common Name-
A) Coat buttons
B) Tridex Daisy

Fig 1. Tridax Procumbens

Chemical constituents-

The plant exhibits a variety of chemical components, including methyl, 14- oxoacagaecunoate, 14-oxononacosanoate, 3-methyl-non dodecylbenzene, heptacosanylcyclohexanecarboxylate,12-hydroxytetracosa-15-one,-amyrone, fecosterol, and sitosterol, as well as arachidic.

2) Murraya Koenigii (Linn.) Spreng.

ACTIVITY FOUND:
1. Anti-Pyretic

2. Hypo glycaemic

3. Anti-Microbial

4. Hepato protection

5. Anti-inflammatory

6. Cytotoxic

Kingdom- Plantae

Family- Rutaceace

Genus- Murraya

Species- M.Koenigii

Common Name-

1. Sweet Neem

2. Curry Leaf Tree

3. Karwa Pale

4. Karapincha

Fig 2. **Murraya Koenigii**

Chemical constituents-

Leaves contain essential oil 0.14 to 0.32 percent (v/w) whose main constituents are mono and sesquiterpenes. The major constituents of the essential oil are sabinene (31.8 to 44.8 percent) β- caryophyllene (24.4 percent) , α- pinene (19 to 19.7 percent) and β- Phellandrene.

Benefits –

Among the many advantages of anti-inflammatory polyherbal gels include reduced pain and inflammation, enhanced wound healing, and possible advantages for ailments like arthritis. Because they are less likely to cause gastrointestinal side effects, they are frequently chosen over oral NSAIDs.

1) **Pain and Inflammation Relief**: Polyherbal gels are useful for reducing pain and inflammation, which makes them appropriate for ailments including sprains, arthritis, and muscular pains.

2) Wound Healing: According to ScienceDirect.com, several polyherbal gels have been demonstrated to hasten wound healing by encouraging tissue remodeling and boosting wound strength.

3) Synergistic Effects: According to the International Journal of Pharmaceutical Sciences and Research (IJPSR), the blend of several herbs in polyherbal gels can have synergistic effects, resulting in increased anti-inflammatory action when compared to individual herbal gels.

4) Safe and Effective Substitute: According to the Journal of Young Pharmacists, polyherbal gels may be a safe and efficient substitute for traditional NSAIDs in the treatment of pain and inflammation.

5) Better Daily Living Activities: According to PubMed, polyherbal gels can assist reduce pain and stiffness, which may enhance people's capacity to carry out daily tasks.

Formulation table –

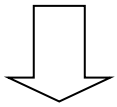
For 10gm gel-

Ingrendient	**Quantity**
Tridax rocumbens extract	1 gm
Murraya koenigii extract	1 gm
Carbopol 940	0.4 gm
Triethlamine	Q.s
Methyl paraben	0.2 gm
Propyl paraben	0.2 gm
Rose water	5 gm
Distilled water	Q.s

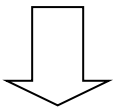
Procedure-

1) Preparation of herbal extract –

Dry leaves of tridaxprocumbens and murraya koenigii was taken.



Then with the help of motar and pestel fine powder was made and mix .



Filter and concentrate to get semi-solid extract.

2) Preparation of carbopol gel base-
A) Take carbopol and disperse it in a distilled water with continous stirring.
B) Keep it to hydrate for minimum 1-2 hours for comlete sweeling.
3) Preservative solution-
Dissolve methyl paraben and propyl paraben in rose water
4) Mixing water-
Add the herbal extract to the preservative solution with gentle strring.
Combine this mixture with the hydrated carbopol gel base.
Evaluation test –

1) PhysicalEvaluation:
In this evaluation test ,such as colour and look were assessed.
A) Colour- Yellowish-brown
B) Aperance-Uniform.
C) Odur-Pleasant
D) texture-Smooth.

2) Stability analysis: The formulations underwent a four-week physical stability test at a range of temperatures, including 2ºC and 25ºC. Within four weeks,it was discovered that the formulation was physically stable at various temperatures, such as 2°C and 25°C.

3) **pH:** A digital pH meter was used to determine the pH of different gel compositions. Aprecise 2.5gm of gel was weighed, mixed with 25ml of purified water,and kept for two hours.Three samples o feach formulation's pH were used to measure it, and the average results are shown. Using a pH meter, the pH of the dispersions was determined.

4) **Irritability**: Human subjects 'skin was exposed to test for mulations, and the results were tracked.

Result-

Apperance- Yellow-brownish colour, smooth and uniform.
pH-After the test pH was 6.4 .
Stability – The gel was stable at 4 c to 30 c when observe for 4 weeks.

Discussion –

Medicinal and provident, herbal drugs have gained worldwide recognition. Even though the use of these herbal medications has grown, both developed and emerging nations take their efficacy, safety, and quality seriously. Because herbal therapies don't have the usual adverse effects of allopathic medications, they are increasing patient compliance. The goal of the current investigation is to create and calculate a polyherbal gel that contains Murraya Koenigii and a splint extract from Tridax procumbens. Carbopol 940, an extract from Tridax procumbens and Murraya Koenigii, methyl and propyl parabens, and the required amount of distilled water were used to create the gel expression. Tri-ethanolamine was added dropwise to preserve the pH of the skin. Phrasings' physicochemical characteristics, such as density, pH, and spreadibility, were ascertained. Since allopathic medications are linked to adverse effects, herbal remedies are thought to be safer than allopathic ones. Medicating extracts and their phrasings to improve the active half's immersion and penetration into the systemic rotation is one of the strategies for its survival.

Conclusion-

Positively, this study has created new treatment options for wounds with a variety of causes. Tridax procumbens (leaves) and Murraya Koenigii (leaves) are the active ingredients in the created polyherbal wound healing and anti-inflammatory combination. Alkaloids, steroids, flavonoids,

carotenoids, phytosterols, and tannins are examples of phytochemical elements that are thought to be important anti-inflammatory agents. The qualities of the topical gel were developed using the leaf extract of the Tridax procumbens plant, which belongs to the Asteraceae family.

Using methyl and propylparaben as preservatives and carbopol 934 as a gelling agent, the herbal gel formulation was effectively created. The produced gel exhibited favorable gel properties in terms of pH, viscosity, homogeneity, and spreadibility. The gel's ability to decrease inflammation and treat wounds topically was demonstrated by the results of several chemical and physical tests. Given the potential for adverse effects, herbal remedies are thought to be safer than allopathic ones.

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