

Formulation And Evaluation of Blood Purifier by Using Durva

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Abstract: Blood is a connective tissue that safeguards our body from various issues. Without blood, the body cannot function, and blood does not self-purify. When blood does not purify itself, the kidney, liver, and lymphatic system collaborate to assist in the purification process.

Factors contributing to blood impurities include modern lifestyle choices, consumption of junk food, and alcohol intake. Impure blood can lead to various problems, such as acne, rashes, and allergic reactions. Conventional synthetic medications are not available for blood impurities. Herbal formulations are the primary treatment option for blood purification.

Keywords - Cynodondactylon, Durva, traditional use, Pharmacology, Pharmacognostic character, Medicinal plant, Chemical constituents.

I.INTRODUCTION

A "blood purifier" formulation using Durva (Cynodon dactylon) (also called Bermuda grass) comes from traditional Ayurvedic practice, where durva is valued for its cooling, detoxifying, and anti-inflammatory properties. While "blood purification" isn't a scientific medical term, these formulations are often aimed at supporting liver function, skin health, and reducing inflammation.

Durva Grass (Cynodon dactylon) is a medicinal herb widely used in Ayurveda for its blood purifying, cooling, anti-inflammatory, wound healing, and detoxifying properties.



Fig No.1

DOOB GRASS (Cynodondactylon): Doob grass, a widely recognized grass species, originates from the Indian subcontinent. Its scientific name is Cynodondactylon, and it belongs to the Poaceae family, commonly referred to as the Grass family. This grass is known by various names, including 'Indian doob grass,' 'Durva,' 'Bermuda grass,' and 'Hariyali.' It naturally thrives across India, easily identifiable along roadsides, in open grasslands, farmlands, and backyards.

Cynodondactylon, often called Bermuda grass, is also known as couch grass in Australia and New Zealand and is found globally. It is indigenous to Europe, Africa, Australia, and much of Asia, and has been introduced to the Americas.

Mechanism of Blood Purification

The antioxidant compounds present in Durva help neutralize free radicals and improve detoxification pathways.

Free Radical + Antioxidant → Stable Compound

This antioxidant mechanism helps reduce oxidative stress and supports healthy blood circulation.

II.BENEFITS OF DURVA (DOOB) GRASS

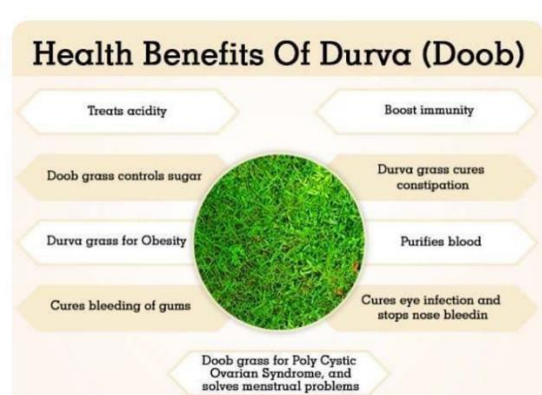


Fig No .2

1. Digestive System Health

Durva is effective for treating acidity, stomach infections, and chronic constipation by optimizing bowel movements. It helps balance pitta dosha, soothing the stomach.

2. Detoxification & Immunity:-

It helps flush out toxins from the body, improving liver and kidney function. It is known to boost immunity and strengthen the nervous system.

3. Wound Healing and Skin Care:-

As a natural styptic (anti-hemorrhagic), its paste or juice helps stop bleeding in minor cuts. It is used to treat skin infections like eczema and rashes.

4. Blood Sugar and Weight Management:-

It has hypoglycemic properties, which may help regulate blood sugar levels, assisting in diabetes management. It is also used to help manage obesity.

5. Urinary Health:-

Due to its diuretic properties, it helps in increasing urine production, aiding in the treatment of UTIs and reducing burning sensations during urination.

6. Other Benefits:-

It is used to strengthen the uterus to support pregnancy, manage hair health, and alleviate joint pain.

Key Pharmacological Activities

1. Antioxidant and Anti-inflammatory:-

Cynodon dactylon reduces oxidative stress and lowers pro-inflammatory cytokines, making it effective for mitigating fatty liver and metabolic disorders.

2. Wound Healing and Antimicrobial:-

The extract acts as a vulnerary (heals wounds) and shows strong activity against pathogens like Staphylococcus aureus and E. coli.

3. Hemostatic (Blood-stopping):-

Traditionally used as an astringent to stop bleeding in wounds, epistaxis (nosebleeds), and menorrhagia.

4. Anti-diabetic:-

Studies indicate that the herb has a significant hypoglycemic effect, helping to lower blood glucose levels.

5. Gastroprotective:-

It helps alleviate gastrointestinal issues, including diarrhea, dysentery, and stomach pain.

6. Immunomodulating:-

It enhances immune function and helps treat skin disorders like eczema and urticaria.

7. Other Activities:-

It has shown potential in pharmacological studies as an antiviral, anti-epileptic, and hepatoprotective (liver-protecting) agent.

III. PHARMACOGNOSY ACCORDING OF CYNODON DACTYLON

1. Synonyms:- Durva

2. Biological Source:- Durva is scientifically known as Cynodon Dactylon

3. Family:- Belongs to the grass family Poaceae (formerly known as Gramineae).

4. Common Name:- Durva, Bermuda grass.

5. Part Used :- Whole plant

6. Distribution :- India, Asia, tropical regions.

7. Chemical Constituents :-

- Flavonoids
- Alkaloids
- Glycosides
- Terpenoids
- Tannis
- Phenolic acid
- Chlorophyll

8. Morphological character:-

- Colour :- Light green to grayish green
- Taste and odor:- Bitter, astringent, and characteristic.

9. Uses:-

- Hemostatic (Stop Bleeding)
- Wound Healing
- Antimicrobial Activity
- Antidiabetic Activity
- Diuretic Activity
- Anti-inflammatory Activity and Analgesic Uses
- Antioxidant Property
- Gastroprotective uses
- Immunomodulatory Activity

Advantage of Cynodon Dactylon :-

- Natural Hemostatic agent
- Good Wound-Healing Property
- Antimicrobial Activity
- Actioxidant Property
- Antidiabetic Potential
- Diuretic Action
- Anti-inflammatory and Analgesic Effects
- Easily Available and Economical
- Used in Ayurveda and Folk Medicine
- Environmental Advantage

Disdvantage of Cynodon Dactylon :

- Lack of standardized Dosage
- Limited Clinical Evidence
- Possible Contamination
- Risk of Allergic Reaction
- Possible Drug Interaction
- Short Shelf Life
- Overgrowth Problem
- Variable Chemical Composition
- Not Suitable For Serious Diseases Alone
- Limited Commercial Formulations

IV.LITERATURE REVIEW

Name	Abstract
Skashi Salvi , Amir Khan, Vanita Lokhande.	They are some of them who are using it for its energy boosting qualities to induce relaxation to supress stomach issue and even boost the immune system.
Aditya S.Ausekar , Dr. Mrunal K. Shirsat , Dr. Santosh R. Tarke Mrs. Gitangali C. Chavan, Shubhangi S. Nilkanthe .	The plant cynodon dactylon is a medicinal plant having family poaceae is used in clinical practice and having high wound healing activity.
Miss. Puja Waghela , Dr. R. A.Ahirrao , Siddheshwar D. Urdukhe, Pritam B. Sonawane.	It has vast medicinal value treatment of various disease cynodon dactylon contained flavonoid , Alkoloid , Giycosides, steroids , Terpenoid , Steroids, Tannis, Resin , etc.

Aim:-

To formulate and evaluate a herbal blood purifier preparation using Durva Grass for its physiochemical properties stability, safety and potential antioxidant antimicrobial activity.

Objectives:-

1. To collect. identify, and authenticate fresh Durva Grass used in the formulation.
2. To prepare a herbal blood purifier formulation (such as syrup, juice, or extract) using Durva and suitable excipients.
3. To study the phytochemical constituents present in the Durva extract.
4. To evaluate the physicochemical parameters of the formulation, such as:

- Ph
- Viscosity

- Color and odor
 - Specific gravity
5. To evaluate the stability of the prepared formulation under different storage conditions.
 6. To perform microbial limit tests for checking safety and contamination.
 7. To evaluate antioxidant activity of the formulation using suitable in-vitro methods.
 8. To study the antimicrobial activity of the formulation against selected microorganisms.
 9. To assess the acceptability and appearance of the herbal formulation.
 10. To compare the prepared formulation with marketed herbal blood purifier products. if required.
 11. To develop a safe, effective, economical. and natural herbal blood purifier using Durva for therapeutic use.

Plan of Work:-

1. Literature review on Durva Grass and herbal blood purifiers.
2. Collection and authentication of Durva plant material.
3. Drying, powdering, and extraction of Durva using suitable solvent.
4. Phytochemical screening of extract for active constituents.
5. Formulation of herbal blood purifier syrup using Durva extract.
6. Evaluation of formulation for:
 - Color, odor, taste
 - pH
 - Viscosity
 - Stability
 - Microbial limit test
7. Recording and analysis of results.
8. Conclusion and future scope of the formulation

- Muslin cloth/filter paper
- Water bath
- Beaker and measuring cylinder
- pH meter
- Brookfield viscometer
- UV spectrophotometer
- Glass bottles for storage

Method of Preparation:-

Collection and Authentication of Plant

Fresh Durva grass was collected from a local area and washed thoroughly with distilled water to remove dirt and impurities. The plant material was shade dried for 5-7 days and powdered using a grinder. The plant was authenticated by a botanist/pharmacognosist.

Preparation of Extract:-

Aqueous Extraction Method

- About 100 g of dried Durva powder was mixed with 500 mL distilled water.
- The mixture was heated at 60-70°C for 2-3 hours.
- The extract was filtered using muslin cloth followed by filter paper.
- The filtrate was concentrated using a water bath until a semisolid extract was obtained.
- The extract was stored in an airtight container for further analysis.

V.MATERIAL AND METHOD

➤ Materials Requires:-

- Herbal Material
 - Fresh Durva grass
 - Distilled water
- Excipients for Syrup Formulation
 - Sucrose sweetening agent
 - Sodium benzoate preservative
 - Citric acid - flavor enhancer and stabilizer
 - Glycerin - viscosity enhancer
 - Peppermint flavor flavoring agent
- Chemicals and Reagents
 - Ethanol
 - Ferric chloride
 - Dragendorff's reagent
 - Benedicts reagent
 - Mayer's reagent
- Equipment
 - Mixer grinder

Procedure:-

1. Collection and Preparation of Plant Material

Fresh Durva grass (*Cynodon dactylon*) was collected and washed thoroughly with distilled water. plant material was shade dried for 5-7 days. Dried material was powdered using a grinder.

2. Preparation of Extract

- About 25 g of powdered Durva was mixed with 100 mL distilled water.
- The mixture was heated for 30-40 minutes for decoction preparation.
- The extract was filtered using muslin cloth or Whatman filter paper.

- Similar extracts of Neem, Tulsi, and Amla were prepared separately
2. Preparation of Syrup Base
- Sugar was dissolved in purified water with gentle heating to prepare syrup base.
 - The solution was filtered to remove impurities.
3. Mixing of Ingredients
- Measured quantities of herbal extracts were added slowly into the syrup base with continuous stirring.
 - Honey and rose water were added
 - Sodium benzoate was dissolved separately and mixed as preservative.
4. Volume Adjustment
- Final volume was adjusted to 100 mL using purified water.
5. Filtration and Packaging
- The prepared syrup was filtered again for clarity.
 - Syrup was filled into amber colored bottles and stored in a cool place.

Evaluation Parameters:-

- Organoleptic Evaluation
 - Color
 - Odor
 - Taste
 - Appearance
- PH Determination
 - The pH of the syrup was measured using a calibrated pH meter.
- Viscosity
 - Viscosity was determined using a Brookfield viscometer at room temperature.
- Specific Gravity
 - Specific gravity was measured using a specific gravity bottle.
- Phytochemical Screening

Preliminary phytochemical tests were performed to identify:-

 - Flavonoids
 - Alkaloids
 - Tannins

Herbal Blood Purifier Formulation Using Durva :-

Sr.No.	Ingredient	Biological Name	Quantity (for 100 ml)	Role
1.	Durva grass fresh Juice	Cynodon dactylon	20 ml	Main Blood – Purifying and Cooling Agent
2.	Neem extract	Azadirachta indica	10 ml	Anti-microbial Activity
3.	Tulsi extract	Ocimum sanctum	5 ml	Antioxidant and immune support
4.	Honey	Natural honey	15 ml	Sweetening Agent
5.	Amla extract	Phyllanthus emblica	10 ml	Rich source of vitamin C
6.	Sugar syrup		30ml	Syrup base
7.	Sodium Benzoate		0.1gm	Preservative
8.	Rose water	Rosa damascena	q.s	Flavoring agent
9.	Purified water		Up to 100ml	Vehicle

VI.CONCLUSION

Cynodon dactylon is extremely useful in ayurvedic, unani and siddha medicine. It has significant role in wide variety of disease and disorder. It is found all over the year and very easily. Different types of therapeutic action shows the medicinal value of Cynodon dactylon. Different types of phytochemical like proteins, minerals, carbohydrates, vitamin C, terpenoids, alkaloids and palmitic acid, Flavonoids:

apigenin, orientin, letuolin, and vitexin found from different parts of the plant.

Biologically active phytoconstituent of the cynodon dactylon are effective against the wound healing and are of higher importance once the product are made easily available.

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