

Different Formulation Of Curry Leaves For Different Purpose

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ABSTRACT: Synonym in our language is Gandala leaves ,but synonymes are different from different locations.The curry leaves having botenical name is MURRAYA KOENIGII and belongs to the family RUTACEAE.The Gandala Leaves are a rich source of Vitamin A,Vitamin B , Vitamin C ,and Vitamin E AND also contain a large amount of calicum ,phosphorous ,and iron.The main activity of this plant based on the leaves .The leaves are collected ,dried and then compare the extraction by different methods .The main aim and objective of this research is extraction by different methods and compare the extract sample of its purity ,solubility ,and stability of the product .Mainly the Hydrodistillation gives a clear liquid by this extraction and also the other methods are included like Soxhlet exteaction ,Maceration Method ,Decoation Method ,Infusion Method .The Soxhlet Extraction is based on a hydroalcoholic extraction and adding a solvent as a mixture of water and alcohol that extracts out the chlorophyll in the sample . The herbal powder of curry leaves are very beneficial digestive purpose as well as kidney disorder .The cream formulation used for urticaria(skin rashes).The oil extraction formulation is used for the hair growth as well as new hair formation .Those leaves having different health benefits like digestion,diabetes controller ,lower chloestrol level,anti inflammatory.

KEYWORDS: MURRAYA KOENIGII ; Extraction ; Hydrodistillation ; Decoation ; Urticaria.Soxhlet Method ;Infusion .

INTRODUCTION

Saurabhanimba consists of dried leaves of MURRAYA KOENIGII LINN,and the family Rutaceae.It is a tree reaching upto 6m with a dark gray and aromatic leaves ,found and cultivated almost throughout the India .

1. Description

1.1. Plant Leaves Description

1.1.1. MACROSCOPIC DESCRIPTION

Leaves are a compound ,imparipinnate ,petiolate ,exstipulate ,rachis 15cm long ,shortly petioulate ,arranged alternatively on the rachis ,lower pairs comparatively smaller in size ,obliquely ovate ,2 to 5cm in length and 1 to 2.5cm in width ,tip acute to obtuse .These leaves having odour ,characterstics aromatic ,taste ,acidic .

1.1.2 MICROSCOPIC DESCRIPTION

Microscopic studies on the leaves part .The leaves part is obtained by transverse section of the midrib transverse section flat towards adaxial surface and rigded towards abaxial surface ,unicellular ,non glandular trichomes aries from the abaxial epidermis ,adaxial and adaxial hypodermis bi or tri seriate . The ground tissue composed of lossely arranged ,thick walled isodiametric ,parenchymatous cells ,vascular bundle forms an are with adaxial xylem and adaxial phloem ,xylem compries of vessels with annular and spiral thickenings.

1.1.3 POWDER

The powder is slightly oily and aromatic ,acidic ,greenish coloured ,epidermal cells,unicellular thick walled ,long trichomes at the upper parts of the leaves .

ACTIVE CONSTITUENTS

It contains a alkaloids like Koenidine ,Koenigine ,Koenimbine ,Mahanimbine ,Muconine murryacine and volatile oil



MATERIAL AND METHOD

Plant leaves are obtained from species MURRAYA KOENIGII .This plant is mostly found in different regions of the Himachal Pradesh .

COLLECTION

Leaves are collected from the JAS MAN GREEN HOUSE NURSERY (AMBOTA)HIMACHAL PRADESH .

METHODS

Firstly washed the green leaves with purified water and then dry the leaves at hot air oven at specified temperature (35 to 45 degree)and also obtained the dried material from sunlight for (2 to 3 days).

POWDER FORMULATION OF CURRY LEAVES

INGERIDENTS	QUANTITY	PURPOSE
CURRY LEAVES POWDER	20GRAM	ACTS AS ACTIVE INGREDIENTS.
AJWEIN POWDER	7.25GRAM	IMPROVE THE FLOW OF THE STOMACH
CARDMOM POWDER	3GRAM	USED FOR TREATMENT OF CONSTIPATION.
AMLA POWDER	12GRAM	IMMUNE SYSTEM SUPPORT .
SUCROSE	4GRAM	ENHANCE THE TASTE .
SODIUM CHLORIDE	4GRAM	ENHANCE THE TASTE .

PURPOSE (USED TO IMPROVE THE DIGESTION IN THE HUMAN BOBY) DOSE(DOSE PRESCRIBED AS PER AYURVEDIC PHARMACOPOEIA 3 TO 6GRAM)(DOSE PERSCRIBED AS PER RESEARCH IS 4GRAM).



MINOR SIDE EFFECTS

- Allergic reaction of some individual persons.
- GIT Discomfort due to high dose consuming .
- Not prescribed for pregreny or breast feeding time .

SYRUP FORMULATIONS OF CURRY LEAVES

In syrup formulation that are basically involved the extraction process

- SOXHLET EXTRACTION METHOD
- PERCOLATION METHOD
- MACERATION METHOD
- DECOATION METHOD
- BY HYDRODISTILLATION METHOD

SOXHLET EXTRACTION METHOD

Used to prepare a hydroalcoholic syups

PROCEDURE FOR SOXHLET EXTRACTION OF CURRY LEAVES

Firstly prepare the thimble and the thimble containing a 10gram of dried coarsely powdered sample material .And then fixed the thimble in the

assembly and arranged the assembly then add 400ml of 50 percent of solvent ,the solvent used as water and ethanol .

200ml of ethanol and 200ml of water added and reflux the assembly for 6 to 8 hrs and at temperature (77 to 78 degree) .

Then extraction of mint and ajwein follows the same procedure at different assembly .

EXCIPIENTS USED FOR THOSE FORMULATIONS

INGREDIENTS	ACTION
TUMERIC EXTRACT ,GINGER ,CINNAMON	HERBAL ANTIMICROBIAL AGENTS
CLOVE OIL	PERSERVATIVE
MINT ,GINGER ,CARDAMOM	FLAVORING AGENT
SAFFRAN	COLOURANT
HONEY	SWEETENING AGENT
GLYCERIN	THICKING AGENT

EXTRACTION OF THE EXCIPIENTS EXTRACTION OF TUMERIC BY MACERATION METHOD

Firstly weigh 15gram of finely ground tumeric powder and then it dissolved in 100ml of 70 percent alcohol .And this preparation was left undisturbed for 2 to 3 days and then filter out with the help of filter paper .

further add 70 percent of the solvent ,after 2 to 4 hrs the clove oil is extracted out .

EXTRACTION OF CARDMOM OIL BY HYDRODISTILLATION

Firstly weigh 6gram of cardmom and reduce their size with the help of motor and pestle and again weigh it and further add 70 percent of of the solvent ,after 2 to 5 hrs the cardmom oil is extracted out .

EXTRACTION OF CLOVE OIL BY HYDRODISTILLATION

Firstly weigh 6gram of clove and then reduce their size by motor and pestle then again weigh it and

FORMULATION OF SYRUP BY SOXHLET METHODS

INGREDIENTS	QUANTITY
CURRY LEAVES EXTRACT	6ml
MINT LEAVES EXTRACT	3.5ml
AJWEIN SEEDS EXTRACT	3.5ml
TUMERIC EXTRACT	2.5ml
CLOVE OIL EXTRACT	2.5ml
CARDMOM EXTRACT	2.5ml
SAFFRON EXTRACT	2.5ml
HONEY	10ml
GYCERIN	12ml

PROCEDURE FOR SYRUP PREPARATION BY SOXHLET METHOD

Firstly extract of curry leaves ,ajwein seeds ,mint leaves extract and added and measure the sufficient quantity with the help of measuring cylinder .Transfer the material one by one to the

beaker and continue stirring with the help of glass rod .Lastly added the honey and glycerin with the help of the laboratory stirrer at specified rotation .The laboratory stirrer is used for mixing of viscous substances and uniformaty of the content .

FORMULATION OF SYRUP BY PERCOLATION

INGREDIENTS	QUANINTY
CURRY LEAVES EXTRACT	10ML
AJWEIN EXTRACT	5ML
MINT EXTRACT	5ML
CLOVE OIL EXTRACT	5ML
GLYCERIN	10ML



PROCEDURE

Percolator is used for the percolation extraction .Firstly added a cotten to form a cotten bed and then add 10gram of sample with sufficient quantity of solvent and transfer into the percolator

and further applied the filter and added a dry sand and added the further solvent and then leave the percolator for 2 to 3 days and then extract out the material .

PURPOSE

USED FOR THE KIDNEY DISORDERS.

FORMULATION OF SYRUP BY MACERATION EXTRACTION

INGREDIENTS	QUANTITY
CURRY LEAVES EXTRACT	5ML
MINT EXTRACT	2.5ML
AJWEIN EXTRACT	2.5 ML
CLOVE OIL EXTRACT	3.5 ML
GLYCERIN	10ML
HONEY	13ML



PROCEDURE

Take 10gram of sample into 100ml of the solvent (ethanol). Then the presence of alcohol that release the chlorophyll in the solvent. The main coloured of the sample is green. Rest the sample for 2 to 7 days. The cell wall gets rupture and the material gets extract out. And Then filter out the

material with the help of the filter paper. Further added the ajweini and mint extract at specified quantity mentioned above in the formulation and added clove oil, transfer the beaker into the laboratory stirrer and added honey and glycerin. Slightly bitter taste and the greenish coloured syrup.

FORMULATION OF SYRUP BY DECOCTION METHOD

INGREDIENTS	QUANTITY
CURRY LEAVES EXTRACT	5ML
MINT EXTRACT	2.5ML
AJWEINI EXTRACT	2.5ML
CLOVE OIL	3.5ML
GLYCERIN	12ML
HONEY	10ML

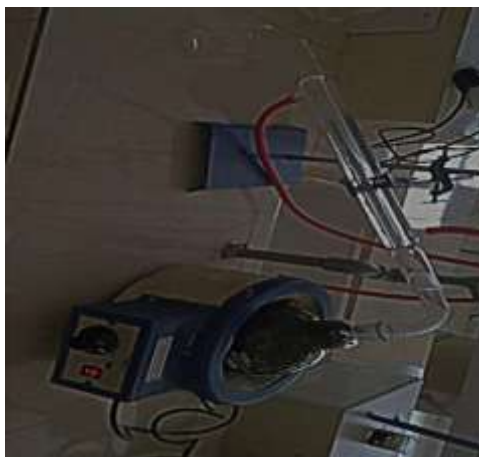
PROCEDURE

Boiling the after all material are mixed together, and the solvent are evaporated by specified temperature

Actual form of syrup are available after boiling.

FORMULATION OF SYRUP BY HYDRODISTILLATION

INGREDIENTS	QUANTITY
FINE POWDER OF CURRY LEAVES	10GRAM
FINE POWDER OF AJWEINI SEEDS	5GRAM
FINE POWDER OF MINT LEAVES	5GRAM
HYDRODISTILLATION EXTRACT OF CURRY LEAVES	30ML
GLYCERIN	10ML
HONEY	10ML



PROCEDURE

Firstly take a fine powder of curry leaves ,ajweini seed powder ,dried mint leaves powder and add then 30ml of hydroextract of curry leaves transferred in it (hydrodistillation take place a dried leaves curry leaves {100gram into 700ml of water then fix the assemble for the 2 to 4 hrs the material gets extract out }).And then filter it with the help of the filter paper the clear brownish liquid is obtained and then add glycerin and honey mixed together with the help of the laboratory stirrer .

PURPOSE

Used for the digestion purpose .

2. RESULT FROM THE SYRUP BY DIFFERENT EXTRACTION

Compersion of extraction by different methods like soxhlet extraction ,percolation , maceration ,decoation , hydrodistillation method .But the hydrodistillation is effective distillation as compare to other and also safe for the human body because of the solvent is used as a water . But in case of stability the soxhlet extracted syrup is more stable and pure for long time .maceration method containing a solvent as alcohol but they having a highly bitter taste .

3. THERAPEUTIC DISCUSSION OF CURRY LEAVES

It is used for the treatment of the PILES ,DIARRHOEA ,EMESIS ,BURNING SENSATION ,NON HEALING ULCER ,FEVER ,ITCHING ,WORM INFESTION ,LEPROSY AND DISEASE OF SKIN ,METABOLIC DISORDER ,DYSENTERY ,PAIN AND COLIC ,OEDEMA, VITILGO .

4. CONCLUSION

SOXHLET EXTRACTION is hydroalcoholic based and more effective as compare to other extraction. But ACCORDING the safety the HYDRODISTILLATION is effective and they do not have any side effect when the large dose consuming. But in Soxhlet extraction having side effect due to large dose consuming .

5. MATERIALS AND METHODS FOR CREAM FORMULATION OF CURRY LEAVES

It is a water soluble medicinal preparation applied to the skin ,cream is a semisolid dosage form containing more than 20 percent water and volatile components and typically less than 50 percent hydrocarbon waxes ,or polyols as vehicle .

INGERIDENTS	QUANTITY	PURPOSE
CURRY LEAVES EXTRACT	2ML	TREATMENT OF URTICARIA
NEEM LEAVES EXTRACT	2ML	ANTI BACTERIAL
LIQUID PARAFFIN	5GRAM	LOCK MOISTURE
BEE SWAX	20GRAM	STIFFING AGENT
BORAX	5 GRAM	EMULSFYING AGENT
SODIUM BENZONATE	0.8GRAM	PRSERVATIVE
ROSE WATER	0.2ML	REDUCE SKIN REDNESS
DISTILLED WATER	Q.S	MAKE A AQUEOUS MIXTURE

PROCEDURE

- Preparation of oil phase

Take a liquid paraffin in china dish and then add bees wax and transfer the china dish into the water bath at temperature 75 degree

- Preparation of aqueous phase

Take a borax into the beaker and added sodium benzoate then added distilled water for sufficient quantity and transfer the beaker into the water bath at temperature 75 degree

- Then after proper melting, then reduce the temperature at 45 degree, then added the aqueous phase to oil phase, continuous stirring with the help of glass rod.
- After adding both phase, then add a curry leaves and neem leaves extract and cool the material
- After cooling the material added the rose oil and then packed in container and labelling it.



PURPOSE

Used for the treatment of skin rashes.

FORMULATION OF TABLET BY CURRY LEAVES

FORMATION OF API BY CURRY LEAVES

- Firstly take a dried curry leaves and add form a powder and then sieve out the powder.
- The powder is weighed 1 gram and then transfer in the beaker adding polar solvent (acetone) (7ml) into it.
- Heating the content and remove the solvent
- Transfer the material into the petri plate at hot air oven at 60 degree
- After drying, the API get formed

TABLET FORMULATION BY CURRY LEAVES

- Firstly take API and lactose transfer into the motor and pestle uniformly mixed together.

- Then prepare the starch paste, and added the starch paste into the motor and pestle
- Properly mixed the material, and form a cohesive mass.
- Then the cohesive mass transfer into the sieve no. 10 the sieved out material is a granules in smaller sized.
- Collected the material in collector pan, then transfer into the petri plate
- Then further transfer into the hot air oven at temperature 57 degree for 1hour.
- The moisture get evaporated and form a dried granules.
- Sieved out at the material at sieve no. 22.
- Then add a talc and magnesium stearate mixed with the help of spatula.
- Transfer into the tablet punching machine and form a tablet.

INGREDIENTS	QUANTITY
API	25MG
LACTOSE	500MG
STARCH	30MG
MAGENISUM STERATE	7MG
TALC	5MG
POLYVINYLPIROLIDONE	30MG
COLLOIDAL SILICON DIOXIDE	3MG

PURPOSE

Used for the thyroid function controlling .

Table 1 ASSAY OF THE TABLETS BY USING DIFFERENT TEST SAMPLES FROM THE FORMULATION .

Experiment	Test results Parameter (unit) ^a						Another assay Parameter (unit) ^b	
	Assay-1	Assay-2	Assay-3	Assay-4	Assay-5	Assay-6	Entry-1	Entry-2
1	1.25	1.25 × 10 ⁻⁵	1.25	1.25 × 10 ⁻⁵	1.25	1.25 × 10 ⁻⁵	1.25	1.25 × 10 ⁻⁵
2	2.50	2.00 × 10 ⁻⁵	2.50	2.00 × 10 ⁻⁵	2.50	2.00 × 10 ⁻⁵	2.50	2.00 × 10 ⁻⁵
3	5.00	2.50 × 10 ⁻⁵	5.00	2.50 × 10 ⁻⁵	5.00	2.50 × 10 ⁻⁵	5.00	2.50 × 10 ⁻⁵
4	10.00	5.00 × 10 ⁻⁵	10.00	5.00 × 10 ⁻⁵	10.00	5.00 × 10 ⁻⁵	10.00	5.00 × 10 ⁻⁵
5	20.00	7.50 × 10 ⁻⁵	20.00	7.50 × 10 ⁻⁵	20.00	7.50 × 10 ⁻⁵	20.00	7.50 × 10 ⁻⁵
A^c	1.00	1.20	1.00	1.20	1.00	1.20	N.A.	N.A.
B	<0.01	0.30	<0.01	0.30	<0.01	0.30	-	-
C	-	-	-	-	-	-	>50	200
D	-	-	-	-	-	-	>50	240

EVALUATION PARAMETERS FOR POWDERS

PARTICLE SIZE DISTRIBUTION

Equipment used (sieve shaker).Coarse powder passed through out the sieve no. 10 . Fine powder are passed through the sieve no. 85 .

FLOW PROPERTIES (ANGLE OF REPOSE)

Angle of repose of powder sample is 22.47 mainly flow of the powder is excellent according to the indian pharmacopoeia .

EVALUATION PARAMETERS FOR SYRUPS APPEARANCE

SYRUP BY SOXHLET METHOD	COLOUR
MACERATION	YELLOWISH
DECOATION	GREENISH
HYDRODISTILLATION	GREENISH
PERCOLATION	BROWNISH
	LIGHT GREEN

BULK DENSITY

Bulk density of the powder is 0.63 gram \cm cube

TAPPED DENSITY

Tapped density of the sample is 0.8 gram\cm cube

SOLUBILITY

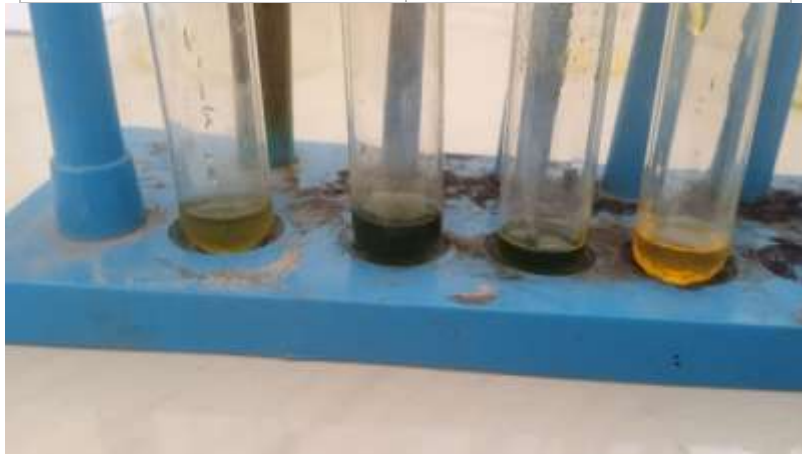
Basically soluble in water as well as ethanol , insoluble in chloroform and benzene .

VISCOSITY (rotational viscometer)

The viscosity of the syrup is lying in 1000 to 3000 cps.

TASTE

SYRUP BY SOXHLET METHOD MACERATION DECOATION HYDRODISTILLATION PERCOLATION	TASTE SLIGHTLY SWEET BITTER BITTER SWEET TASTE SLIGHTLY SWEET
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Ph

Syrup	Ph
Soxhlet extraction	6.7
Maceration	6.2
Decoation	6.5
Hydrodistillation	7.2
Percolation	7

CHEMICAL TESTING

TESTS MOLISH TEST IODINE TEST BENEDICT TEST FOAM TEST MAYER TEST LIBBERMAN TEST SWALKONUS REACTION SODIUM HYRDOXIDE XANTHINE TEST BIURET TEST SOLUBILITY TESTS	IDENTIFIED PRESENT ABSENT ABSENT ABSENT PRESENT ABSENT PRESENT PRESENT ABSENT PRESENT SOLUBLE IN WATER AND ETHANOL .
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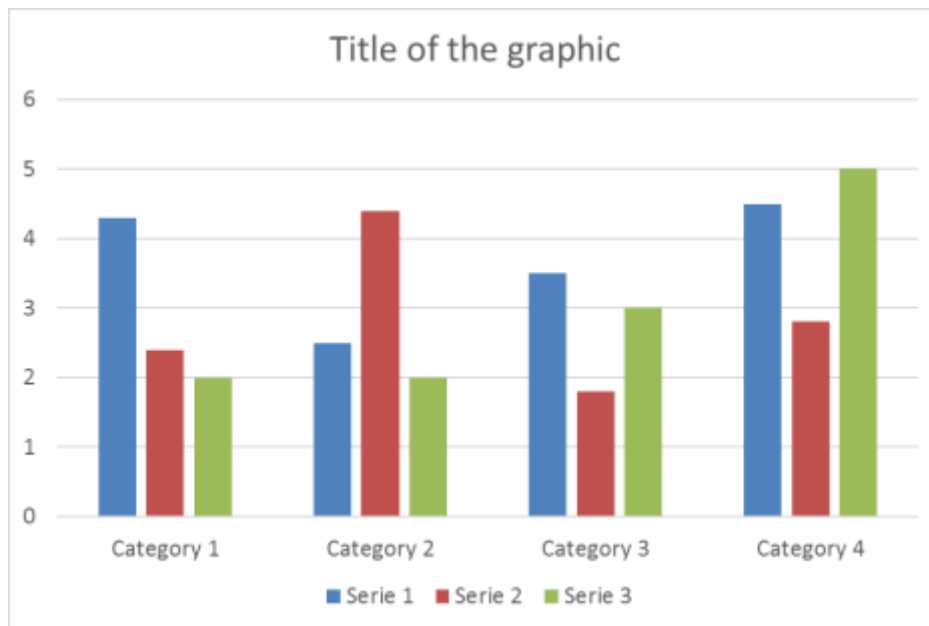
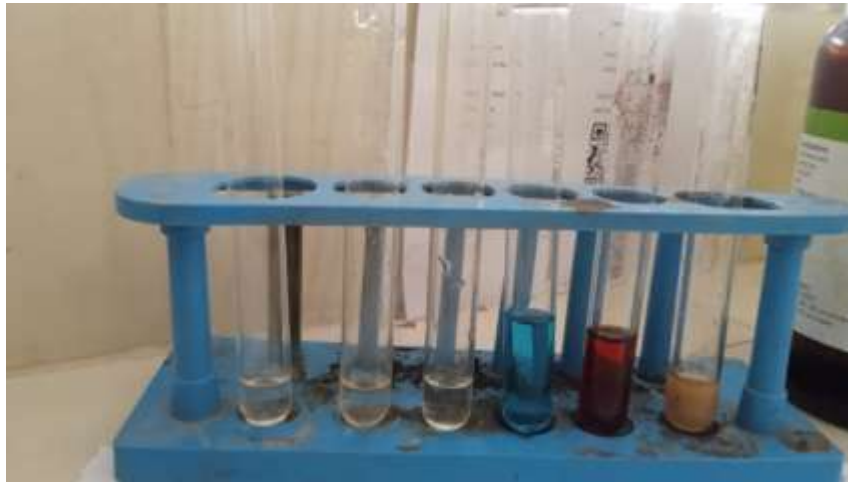


Figure 1. Comparison of stability testing of different syrup formulation. The more stable formulation is a category 4 and category 2 because the solvent is alcohol is used and highly bitter taste of that formulation. Less stable form is category 3 because the solvent is water and cause a high level of the contamination.

- CATEGORY 1 (DECOATION)
- CATEGORY 2 (SOXHLET)
- CATEGORY 3 (HYDRODISTILLATION)
- CATEGORY 4 (MACERATION)

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Author contributions:

- **Sheetal sharma** (a student at ddm college of pharmacy ,himachal pradesh).she played a role in constructing an idea for the research as well as data management and reporting of this research .

- **Ashish sharma**(hold the position of assistant director \assistant professor at ddm college of pharmacy ,himachal pradesh).as a designated guide ,he was responsible for development the concept and organizing the steps that would lead to outcome .

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