

## Review Article on Polyherbal Syrup Used in Various Therapeutic Activity

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### ABSTRACT

Polyherbal formulation has been used all round the world because of its healthful and therapeutic application. It has also known as a polyherbal therapy or herb- herb combination. Polyherbal formulations designed by the combination of multiple herbs exhibit ample advantages over a single herb and allopathic medicine. This resulted in the emerging trend in herbal drug therapy worldwide. People are using herbal and plant-based medicines from centuries for safety, efficacy, cultural acceptability, and lesser side effect. It is due to increase of awareness and knowledge about medicinal plants and their usage. There is also a realization that natural medicines are safer and allopathic drugs are often ineffective in several ailments. More than 700 mono and polyherbal preparation in the form of decoction, tincture, tablets, and capsules from than 100 plants are in clinical use. From this, polyherbal syrups are more effective and convenient to use. This article gives brief idea about recent advancement in development and evaluation of polyherbal formulations in the form of syrup for various therapeutic activities.

**KEYWORDS:** Polyherbal medicine ,Disease, therapeutics activity, chemical constituents

### I. INTRODUCTION:

Herbal medicine is also known as phyto-medicine or herbalism it is a medicine that use plants or their crude products for the treatment of diseases. It may include also animal fungi or bacteria product. Since ancient era, herbal or plant-based medicines has been used for the prevention, cure & mitigation of diseases and time to time more and more herbal constituents of these natural sources are get enhanced. Herbal medicine has its origins in ancient cultures. It involves the medicinal use of plants to treat disease and enhance general

health and wellbeing. Some herbs have potent (powerful) ingredients and should be taken with the same level of caution as pharmaceutical medications. In fact, many pharmaceutical medications are based on man-made versions of naturally occurring compounds found in plants. For instance, the heart medicine digitalis was derived from the foxglove plant. Herbal medicine aims to return the body to a state of natural balance so that it can heal itself. Different herbs act on different systems of the body. (1)

**Syrup :** Syrup is viscous, concentrated or nearly saturated aqueous solution of sucrose containing 66.7 % w/w of sugar.

It has mainly two types as:

**a) Medicated syrup:** Medicated syrups are nearly saturated solution of sugar in water in which medicaments and drugs are dissolved. It is intended for oral use.

**b) Herbal syrup :** An herbal syrup is prepared by mixing an concentrated decoction with either honey or sugar or alcohol. It is intended for oral use. Herbal syrups show an more potent action then other types of syrup.

### Advantages:

- Good patient compliance.
- They are more palatable.
- Disguised the bad taste of medication

### Disadvantages:

- During storage it causes an crystallization of the sugar within the screw cap.
- Not suitable in emergency and unconscious patients.
- Delayed onset of action because absorption takes time<sup>[6]</sup>

### Method of preparation:

Simple syrup:

Mix 66.67% w/w of sucrose in required quantity of distilled water to prepare a concentrated solution of simple syrup<sup>[5]</sup>

Preparation of flavor solution

To prepare a flavor solution using Cardamom, follow these steps:

Ingredients:

Cardamom

Carrier oil (such as vegetable oil or almond oil)

Glass dropper bottle

Instructions:

- Start by selecting a high-quality, Cardamom. Make sure it is specifically labeled for culinary use.
- Choose a carrier oil to dilute the cardamom. Carrier oils help disperse the flavor and ensure it's safe for consumption. Vegetable oil or almond oil are commonly used as carrier oils.
- Determine the desired strength of the flavor solution.
- Prepare a clean glass dropper bottle for storing the flavor solution. Glass bottles are preferred over plastic ones to avoid any potential interaction between the oil and the container.

### Addition of excipients:

Excipients are inactive ingredients added to pharmaceutical formulations, including syrups, to aid in the manufacturing process, improve stability, enhance palatability, or facilitate drug delivery.

- Preservatives:** Syrups may contain preservatives to inhibit the growth of microorganisms and extend the shelf life of the product. Common preservatives used in syrups include benzoic acid, and parabens.
- Stabilizers and Thickeners:** Stabilizers and thickeners are added to syrups to improve their consistency, prevent separation, and provide a uniform distribution of the active ingredients.
- Coloring Agents:** Coloring agents may be added to syrups to enhance their visual appeal and aid in product identification.
- Flavoring agent:** cardamom

### Benefits Of Herb-Herb Combination

Polyherbal formulations designed by the combination of multiple herbs exhibit ample advantages over a single herb and allopathic medicine. This resulted in the emerging trend in herbal drug therapy worldwide [3].

> High therapeutic effectiveness against a vast number of afflictions is exerted owing to the presence of numerous phytoconstituents. Factual assessments show an inclination for herbal preparations due to their adequacy and promising outcomes of the treatment [3]. > By abolishing the need to administer more than one single herbal formulation at a time, polyherbal preparations bring enhanced convenience for patients. As the administration of multiple herbs as one formulation shows better convenience, it indirectly marks improved patient compliance [4].

> The existence of multi-components in the combination serves to potentiate the action of one drug by another. Individual components when utilized alone, this enhancement in activity may not be attainable [4].

Polyherbal formulations have a widespread therapeutic window. Being viable indeed at a lower dose and harmless at a higher dose, most of them have a predominant risk-to-benefit ratio [5].

> Herbal combinations with several constituents simultaneously act on diverse targets to elicit intensive alleviation. The presence of distinctive types of constituents remedies the affliction by distinctive mechanisms to provide a complete treatment against an illness [4].

> Due to synergism, polyherbal preparations are desirable. They can be prescribed at a lower dose to accomplish the required pharmacological action. This results in decreasing the possibility of harmful side effects as compared to allopathic medication [3][4].







> Synergism could be attained at the pharmacokinetic or pharmacodynamic level. Pharmacokinetic synergism is seen when the absorption, distribution, metabolism, and elimination of one herb are facilitated by another in the combination. Pharmacodynamic synergism is achievable by targeting active principles from multiple components toward common physiological systems [3][4].

> Having a natural source, developing a polyherbal formulation is economical and it is easily available. Global demand for PHF has increased due to accessibility and affordability, especially in developing countries [3]. More than 700 mono and polyherbal preparation in the form of decoction, tincture, tablets, and capsules from than 100 plants are in clinical use [5]. From this,

polyherbal syrups are more effective and convenient to use.

**COMPARATIVE STUDY OF HERBAL SYRUP:**

Sr. No	Composition of formulation	Chemical constituent	Therapeutic uses	Solvent and method	Reference	Images
1.	Gymnema Sylvestre & syzygium cumini	Gymnemic acid, areajmboline and jambosine	Potent antidiabetic effect, constipation allergies <sup>[6]</sup>	Aqueous & decoction	8,9	
2.	Cinnamomum Tamala & Psidium guajava	Polyphenol and fiber of guajava leaves	Diabetes mellitus and wound healing property	Aqueous & decoction	10	
3.	Ocimum tenuiflorum & zingiber officinalis	Essential oil, gingerol	Expectorant, asthma	Honey and maceration	11	
4.	Kiwi fruits, Basil leaves, Orange peels	vit-c, linalool, eugenol	cancer, anti eye disorder, CVS disorder, Diabetes	Alcohol and decoction	12	
5.	Pudina, cinnamon, fennel	Methanol, Ethanol, cinnamon aldehyde, fenchone	Laxative, bactericidal, carminative	Honey and decoction	13	
6.	Eugenia jambolana, Momordica charantia, Ocimum sanctum	Terpenoids, jambolin saponin	Increase Hb, Diabetes management	Hydroalcoholic extract and Soxhlet	14	
7.	Phyllanthus emblica and Annona squamosa	Ascorbic acid, Quercetin, gallic acid	Blood sugar level, heart health, cancer	Aqueous and Decoction	7	
8.	Eugenia jambolana, Gymnema sylvestre, Momordica charantia, Andrographis paniculata, Myristica fragran	Myricetin, elemicin, saponin, triterpenoid	Diabetes mellitus, cancers	Hydroalcoholic extracts Triple maceration	15	

9.	Ricinus Communis, Tribulus terrestris and Piper nigrum	Palmetic acid, siisterol, tocoferol, linolic acid	Constipation , arthritis, maintain sugar level	Ethanol and Cold maceration	16	
10.	Schrebera swietenoides, Barleria montana and Rotula	Irioids, phenolic acid, glycosides, lignins	Antimicrobial, antidiabetic, anticancers	Methanol extract Soxhlet	17	
11.	Glycosmis pentaphylla, p rocumbens, and Mangifera indica	$\alpha$ -glucosidase, dipeptidyl peptidase-IV, pancreatic $\beta$ cells, insulin	Type II diabetes management , aphrodisiacs ,diuretics	Ethanol and soxhlet	18	
12.	Spilanthe safricana, Portulaca oleracea Linn., and Sida rhombifolia	kaempferol, myricetin, luteolin, apigenin quercetin, genistein, and genistin,	Antidiabetic, antioxidant	Aqueous and maceration	19,20	
13.	Tribulus terrestris, Boerhavia diffusa and Azadirachta indica	Flavonoid, terpenoid, boerhavi acid	Heart problem, diuretics, chest pain	Alcohol and maceration	21	
14.	Emblica officinalis, Gymnema sylvestre, Terminalia arjuna, Tinospora cordifolia and Zingiber officinale	Alpha amylase, glycoside	Diabetes, antimicrobial, hyperlipemia	Supercritical CO2 & Supercritical fluid extraction (SFE) method	22	
15.	Vernonia amygdalina, Ocimum gratissimum, Allium sativum and Zingiber officinale	Saponin, anthraquinone , phenolic acid lignans	Diabetes, joint pain	Aqueous & Continuous cold extraction	23	

16.	Alternanthera sessilis, Amaranthus viridis, Boerhavia diffusa	Alkaloid terpenoids, polyphenol	Diabetes, cough	Aqueous and Decoction	24	
17.	Caesalpinia bonducella, Muconapuriens and Pongamia pinnata	Lignans, phloroglucinol, flavonoid	Abdominal pain, edema, malaria, fever	Aqueous and Continuous hot soxhlet extraction	25	
18.	Adiantum capillus, Astercanthalongifolia, Callicarpa macrophylla, Ficus benghalensis, Melia azedarach	Oleananes, alicyclics, alkaloid	Diabetes, epilepsy, urinary disorder	Ethanol, and Soxhlet apparatus	26	
19.	Camellia sinensis and Macrotyloma uniflorum	Caffeine, tannin	Diabetes mellitus, digestive problem	Methanol and maceration	27	
20.	Azadirachta indica, Andrographis paniculata and Moringa oleifera	Nimbolinin, nimbin, flavonoids, diterpenoids.	Antimicrobial, antidiabetic, Anti-inflammatory.	Hydroalcoholic extracts and maceration	28	
21.	Solanum nigrum, Premnacorymbosa, Holarrhena pubescens, Alstonia scholaris and Gymnema sylvestre	Steroidal saponin and steroidal lignin	Diabetes, laxative, antipyretics	Alcohol and maceration	29	
22.	Syzygium cumini, Urtica dioica and Gymnema Sylvester	Anthocyanin, glycoside, ellagic acid	CVS disorder, asthma	Methanol & Rotary shaking	30	



## II. CONCLUSION

Herbal medicines are used by 50% of world population, because of their better acceptability, better compatibility with humans. It has lesser side effects than synthetic ones. In this study we prepared an Polyherbal Syrup using anvarious extraction of polyherbal plant herbals possess an potent severe disorder of disease effect as referred from the literature study. Nowadays, increasing demand for herbal medicine has been increased. People may like to accept the herbal medicine due their lesser side effects.

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