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ORIGINAL RESEARCH ARTICLE

Pharmacognostical and Phyto-Chemical Evaluation of *Bilvadi leha*- An Ayurvedic Formulaton

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ABSTRACT

Bilvadi leha is an Ayurvedic classical formulation described in the Sahasrayoga, Lehaprakarana-1. This compound contains *Aegle marmelos* (L) Corr. as chief ingredient. Pharmacognostical study of finished drug exposed the quality and genuineness of all the constituents of *Bilvadi leha*. Organoleptic features of *Bilvadi leha* were within the standard range. The pH value of *Bilvadi leha is* 6, Water soluble extract is 70.84%w/w, Alcohol soluble extract is 8.45%w/w, Ash value is 2.86%w/w, Loss of drying is 16.38%w/w.

Key words: *Bilvadi leha*, organoleptic, Pharmacognosy, Pharmaceutical.

INTRODUCTION

Bilvadi leha is mentioned in Ayurvedic classics[1]. In *Bilvadi leha*, main ingredient is *Bilv*a (*Aegle marmelos* Corr.) *Bilva* has *grahi* and *vatshelmahar*[2] property. *Bilvadi leha* is one of the best drug in gastro-intestinal disorders such as Tastelessness, Digestive impairment, Excessive salivation[3].

Irritable bowel syndrome (IBS) is a vague term for a variety of diseases causing discomfort in the gastro-intestinal tract and causing a great morbidity in the population. It is called by many names, among them colitis, mucous colitis, spastic colon, or spastic bowel are few. It is a functional bowel disorder characterized by chronic abdominal pain, discomfort, bloating, and alteration of bowel habits in the absence of any organic cause[4]. Certain psychological conditions are also more common in those with IBS. Diarrhea or constipation may predominate, or they may alternate (classified as IBS- D, IBS-C or IBS-A, respectively)[5]. Irritable bowel syndrome affects 15 to 20% of Indian population[6].

There is no single disorder in Ayurveda which can be exactly co-related with IBS. Some conditions in particularly, fairly reasonable similarity with IBS in their clinical pictures. These are *Atisara, Pravahika, Grahania and Pakvashayagata Vata*[7].

In the management of Irritable Bowel Syndrome lots of formulations have been mentioned in Modern medicine. Modern therapeutic molecules will provide instant relief in these cases, but are tend to develop a number of adverse drug reactions. Knowing this, the current suffering population is looking towards few remedies from other systems of medicines, which can provide relief without manifesting any inconveniency. *Bilvadi leha*[8], a promising herbal drug that is being successfully prescribed by Ayurvedic physicians without any side effects since centuries is evaluated for its clinical efficacy in the condition of IBS.

AIMS AND OBJECTIVES

1. Pharmacognostical study of *Bilvadi leha*
2. Physico-chemical analysis of *Bilvadi leha*

MATERIALS & METHODS

Test drug- *Bilvadi leha* is prepared by *Arya Vaidya Sala Kottakkal* – 676503, Kerala, India. The ingredients and the parts used are given in (**Table 1**).

Table 1: Formulation composition of *Bilvadi leha* (Each 10 gm)

S.No	Drug	Botanical name	Part used	Quantity
1	*Bilva moola*	*Aegle marmelos*	Root	16 gm
2	*Jeerna guda*	Old Jaggery	-	8 gm
3	*Ghana*	*Cyperus rotundus*	Rhizome	0.125 gm
4	*Dhanyaka*	*Coriander sativum*	Fruit	0.125 gm

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5	*Jeeraka*	*Cuminum cyminum*	Fruit	0.125 gm
6	*Truti*	*Elettaria cardamomum*	Seed	0.125 gm
7	*Twak*	*Cinnamomum zeylanicum*	Stem bark	0.125 gm
8	*Naga Kesara*	*Mesua ferrea*	Stamen	.125 gm
9	*Shunthi*	*Zingiber officinale*	Rhizome	0.125 gm
10	*Maricha*	*Piper nigrum*	Fruit	0.125 gm
11	*Pippali*	*Piper longum*	Fruit	0.125 gm

Pharmacognostical Evaluation:

Organoleptic characters like taste, odour and colour were recorded. Microscopic study carried out by 10g of *Bilvadi leha* dissolved in small quantity of distilled water, filtered and filtrate was dried then slides prepared with stain and without stain studied under the Carl-zeiss binocular microscope attached with camera. The microphotographs were also taken. The characters of individual drugs were cross verified with API for further confirmation[9,10].

Method of Preparation of test drugs:

Jeerna guda is dissolved in the *Kashaya* (Decoction) of *Bilvamoola* and filtered to remove the foreign particles. This solution is boiled till *Avaleha Sidhi Lakshna* appears like *Tantumatvam*(Thread like consistancy) , *Appasumajjanam*(Sink in water) *Darvipralepa* (Stick with ladle). Removed from the fire and fine powders of drugs from 3- 11 are added and stirred continuously form a homogenous mixture.

RESULTS

Pharmacognostical Study:

Organoleptic Characters:

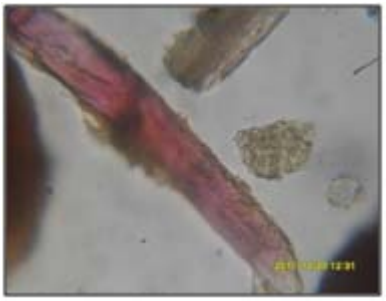
Consistency -Semisolid
Color - Dark brown
Odor - Spicy and pleasant
Taste - Sweetish bitter

Microscopic characters:

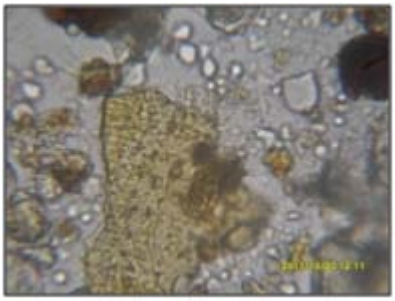
The diagnostic characters of *Bilvadi leha* under microscopic shows the following characters beaker shaped stone cells of *Marich*, mesocarp cells of *Marich*, lignified fibers, trichomes, prismatic crystal and oil containing cells of *Twak*, Mesocarp cells of *Jirak*, Aleurone grains of *Ela*, 1-3 protuberances Pollen grains of *Nagkesar*, Simple starch grains of *Shunthi*, Simple and compound starch grains and oil globules of *Mustak*, Stone cells of *Pippali*, Stratified fibers of *Dhanyak*.(**Fig 1**)

Fig 1: Microscopial characteristics of *Bilvadi leha*

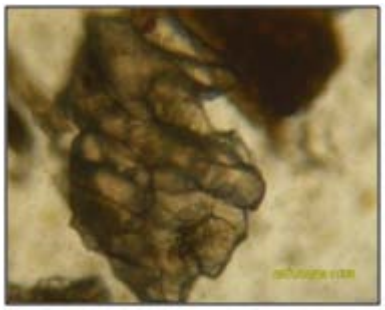
Bilvadi leha



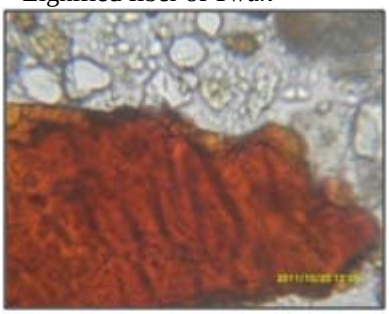
Lignified fiber of *Twak*



Mesocarp cells of *Jirak*

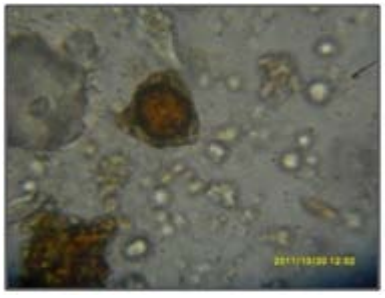


Mesocarp cells of *Marich*

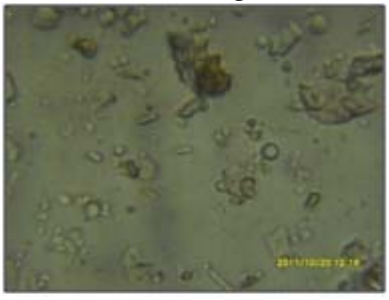


Oil containing cells of *Twak*

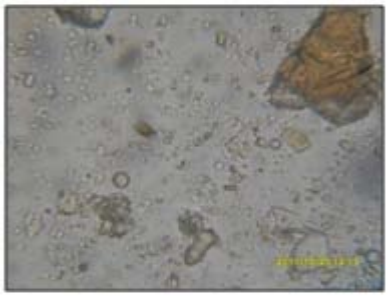
Aleurone grains of *Ela*



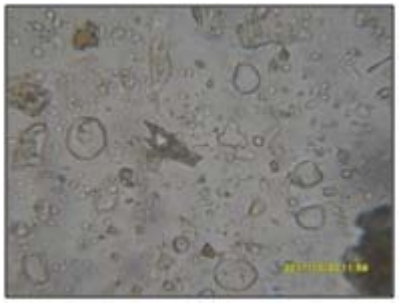
Pollen grain of *Nagkesra*



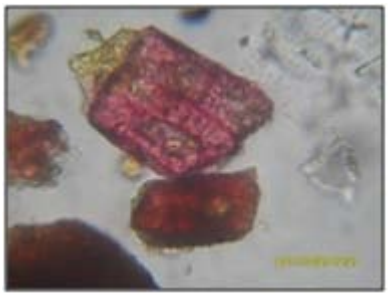
Rod shaped crystals of *Twak*

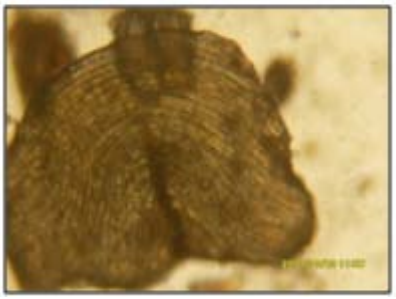


Simple, compound starch grains and oil globules of *Musta*


Simple starch grain of *Shunthi*


Stone cells of *Marich*


Stone cells of *Pippali*


Stratified fibers of *Dhanyak*


Trichome of *Twak*


Beaker shaped stone cells of *Marich*

Pharmaceutical Study[11]:

Pharmaceutical study of the particular drug is required by using the various parameters which helps in the standardization of the drug and to validate .Therefore, the following Pharmaceutical Study of *Bilvadi leha* was carried out at the Pharmaceutical-Chemistry Laboratory. Tabulated in (**Table 2**)

Table 2: Physicochemical Parameters:

Parameters	Value
Loss of drying	16.38%w/w
Total Ash Value	2.86%w/w
pH value	6.0
Water soluble Extract	70.84%w/w
Alcohol soluble Extract	8.45%w/w

DISCUSSION

All the ingredients of the *Bilvadi leha* show that the Pharmacognostical characters like lignified fibers, mesocarp cells, oil containing cells, Aleurone grains, pollen grains, rod shaped crystal, simple and compound starch grain, stone cells, stratified fibers and trichomes. Loss on drying of test drug is 16.38% w/w. Ash value of *Bilvadi leha* is 2.86%w/w. Water soluble extractive is 70.84, alcohol soluble extractive is 8.45% w/w, and acid insoluble ash is 0.20% w/w.

CONCLUSION

The global acceptance of *Ayurvedic* system of medicine is increasing day by day. So it becomes the obligation of every individual of this fraternity to ensure the standard of purity, safety and efficacy of both the crude drugs and formulations used in this system of medicine. With this aim, Pharmacognostical and Phytochemical evaluation of *Bilvadi leha* was performed which is a potent medicine in the management of Irritable bowel syndrome. Preliminary Organoleptic features and results of microscopy were cross verified with individual raw drug of *Bilvadi leha* with the parameters mentioned in API (Ayurvedic Pharmacopeia of India) and all the ingredients were proved to be authentic. In phytochemical analysis, water soluble & alcohol soluble extract, pH, Ash value was assessed. Though the groundwork requisites for the standardization of *Bilvadi leha* is covered in the current study, additional important analysis and investigations are required for the identification of all the active chemical constituents of the test drug to substantiate the clinical efficacy.

REFERENCES

1. Sahasrayoga, Lehaprakrana-1, Chaukhambha Sanskrit Pratisthan, New Delhi, 2007, Pg.176.
2. P V Sharma, Dravyaguna Vijanana , vol .2 , Chaukhambha Bharti Academy , 2001 , Pg .457.
3. Anonymous , Ayurvedic Formulary of India , Part 1 , second edition , Dept of Indian system of medicine and homeopathy , Ministry of health and family welfare 2003, Pg. 141.
4. *Irritable bowel syndrome* at Dorland's Medical Dictionary
5. http://en.wikipedia.org/wiki/Irritable_bowel_ syndrome retrieved on 6/26/2010.
6. Kapur OP, Shah Sharad, Irritable Bowel Syndrome in Indian Patients, Available on http://www.bhj.org/journal/special_issue_tb/ DPII_13.HTM, retrieved on 6/26/2010

7. Agnivesa, Charaka Samhita, Chakrapani teeka , Chaukhambha Prakasahan, Varanasi, 2009; Pg.511,
8. Anonymous, Ayurvedic Formulary of India, Part 1, second edition, Dept of Indian system of medicine and homeopathy, Ministry of health and family welfare, 2003,Pg 141.
9. Kokate CK, Purohit AP, Gokhale SB. Pharmacognosy. 42nd ed. Pune: Nirali Prakashan; 2008. Pg.63
10. Khandelwal KR. Practical pharmacognosy, 19th ed. Pune: Nirali prakashan; 2008. Pg. 13.
11. Ref No. 5 -143 / 2010 / CCRAS / Hqrs /Tech