



STUDY OF SITOPALADI CHURNA WITH REFERENCE TO ITS PHYSICO-CHEMICAL, PHYTOCHEMICAL & MICROBIAL ANALYSIS

Dr Anshuman Rajnala*

MD (Ayu) Department of Rasashastra & Bhaishajya Kalpana Bharti Ayurvedic Medical College and Hospital Durg Chhattisgarh *Corresponding Author

Dr R R Hiremath

PhD, MD(Ayu) Reader Department of Rasashastra & Bhaishajya Kalpana KLEU Shri B.M.Kankanwadi Ayurveda Mahavidyalaya & Hospital Belgaum Karnataka

ABSTRACT

Churna an Ayurveda dosage form contains an herbal powder which is complex mixtures of different ingredients each ingredients has variable in activity, concentration of phyto-chemicals, consistency, stability and shelf life as per particle size. Sitopaladi churna is one of widely using compound formulation indicated in respiratory disorders for all ages. to observe the effect of stability in Sitopaladi churna a study was conducted. Here sitopaladi churna was prepared by using 80# mesh size and done microbial analysis.

KEYWORDS : *Sitopaladi Churna, Physico chemical, Phytochemical & Microbial Analysis.*

Introduction:

Churna kalpana (herbal powder) is one of the important solid dosages of bhaishajya kalpana. Churnas are preparations comprising of fine powders of drugs and may be simple or compound. The principle of using churnas is due to the fact that therapeutic value of most of the substances greatly increases when they are reduced to very fine state of subdivision. Herbal powders are complex mixtures of different component each component has variable activity, concentration and consistency, stability condition and shelf life.

Ayurvedic powders are prepared without any excipients that may affect the stability. Shelf life of churna as per the official gazette is 2 year, i.e when stored in air tight container with proper precautions. But it's difficult to assess the state of churna when handled by consumers at different climatic conditions. The powders exposed to different environmental factors may cause degradation of phyto constituents and also may have microbial growth, affecting the therapeutic value of churna.

Sitopaladi churna is one of the most commonly practiced formulations mainly indicated in respiratory disorders in all ages. So in the present study Sitopaladi churna was selected for its microbial growth analysis.

Objective:

To Study of Sitopaladi Churna for its Microbial Growth Analysis.

Material & method:

All the ingredients were procured from GMP certified KLE Ayurvedic pharmacy. Preparation of Sitopaladi churna was conducted in Department of Rasashastra & Bhaishajya kalpana, KLEU Shri B.M.Kankanwadi Ayurveda Mahavidyalaya.

Table no. 1: Showing ingredients of Sitopaladi churna and their quantity

Sr.no.	Name of drug	Latin name	part	Quantity
1	Khandasharkara	Sugar candy		1280gm
2	Vamshalochana	<i>Bambusa arundicia Wild.</i>	Nirayas	640gm
3	Pippali	<i>Piper longam Linn.</i>	Fruits	320gm
4	Ela	<i>Elettaria cardamomum Maton.</i>	Seeds	160gm
5	Twak	<i>Cinnamenum zeylanicum Breyn</i>	Bark	80gm

Methodology: All ingredients were taken as per specified quantity in a stony mortar and triturated till powder forms. Powder was filtered through 80 number meshes and stored separately. All

individual powders were taken as per specified quantity in a porcelain mortar and triturated till homogenous powder forms. Prepared Sitopaladi Churna will be packed in plastic containers and used for analysis.

Results:

The Results are obtained mainly under two headings:

- Pharmaceutical results
- Analytical results

PHARMACEUTICAL RESULTS:

Table No.2: Showing weight observation of raw drugs and their Fine Powder

Ingredient	Form	Weight	Weight Loss
Sita/Khandasharakara	Raw	1290gm	10gm
	Fine powder	1280gm	
Vamsalochana	Raw	700gm	60gm
	Fine powder	640gm	
Pippali	Raw	500gm	180gm
	Fine powder	320gm	
Ela	Raw	500gm	340gm
	Fine Powder	160gm	
Twak	Raw	180gm	100gm
	Fine powder	80gm	

Table No.3: Showing the Organoleptic Characters of Sitopaladi churna

Sitopaladi churna	Form	Fine powder
	Color	Greyish
	Odour	Characterstics
	Taste	Astringent

ANALYTICAL RESULTS:

ANALYSIS OF RAW MATERIALS:

Table No.4: Showing the Physico-chemical analysis of raw drugs and their API Standards

Name of the drug	Total ash	Acid insoluble ash	Alcohol soluble extract	Water soluble Extract	Loss on drying
Sita/Khandasharkara	16%	10%	-	-	0.54
Vamshalochana	85%	62%	-	-	0.06
Pippali (API)	6.21% NMT7%	0.42% NMT0.5%	6.83% NLT 5%	11.2% NLT 7%	0.12
Ela (API)	5.31% NMT6%	1.41% NMT 2%	6.46% NLT 4%	11.2% NLT10%	0.26
Twak (API)	2.14% NMT3%	1.63% NMT 2%	2.49% NLT 2%	3.28% NLT3%	0.58

*Note:-NMT- Not more than, NLT- Not less than

Table No.5: Showing Organic compounds of raw drugs

Tests for	Pippali	Ela	Twak			
	W.E	A.E	W.E	A.E	W.E	A.E
Carbohydrates	N	N	P	P	N	N
Reducing sugar	P	P	P	P	P	P
Monosaccharides	N	N	N	N	P	P
Pentose sugar	P	P	N	N	P	P
Hexose sugar	P	P	N	N	N	N
Proteins	P	P	N	N	P	P
Amino acids	N	N	P	P	P	P
Starch (Non reducing polysaccharides)	P	P	N	N	N	N
Steroid	P	P	N	N	P	P
Cardiac glycosides	N	N	P	P	N	N
Saponin glycosides	N	N	P	P	P	P
Flavonoids	P	P	P	P	N	N
Alkaloids	P	P	P	P	P	P
Tannins and phenolic compounds	N	N	N	N	P	P

W.E-Water Extract; A.E- Alcohol Extract
(P) –Present & (N) - Negative

Table No.6: Showing Qualitative Test for Inorganic Elements of Raw drugs

Tests for	Pippali	Ela	Twak
Calcium	A	P	P
Magnesium	P	P	P
Sodium	P	P	P
Potassium	P	P	P
Iron	A	A	A
Chloride	P	P	P
Nitrate	P	P	P
Sulphate	A	P	A
Carbonate	A	A	P
Phosphate	A	A	P

(P) Present (A) Absent

Table No.7: Showing TLC of individual drugs of Sitopaladi churna (PHOTOS)

Sr no	Name of the drug	Normal light	Short wave	Long wave
1	Pippali	0.37,0.45,0.53	0.37,0.45,0.53	No band
2	Ela	0.16,0.26,0.40	0.16,0.26,0.38	No band
3	Twak	0.91,0.96,0.98	0.91,0.95,0.97	0.90

Table No.8: Showing Microbial Load Test of Raw drugs

Sr. no	Drug Name	Total Bacterial count	Total Fungal count
1.	Sita/Khandasharkara	Under Limit	Under Limit
2.	Vamsalochana	Under Limit	Under Limit
3.	Pippali	Under Limit	Under Limit
4.	Ela	Under Limit	Under Limit
5.	Twak	Under Limit	Under Limit

Table No.9: Showing Microbial limit Test of Raw drugs

Sr. no	Drug Name	Result
1.	Sita/khandasharkara	Under Limit
2.	Vamsalochana	Under Limit
3.	Pippali	Under Limit
4.	Ela	Under Limit
5.	Twak	Under Limit

Table No 12: Showing the Microbial Limit Test of Sitopaladi churna

Sr.No.	Micro-organisms	Results in Sitopaladi churna
1.	<i>S.aureus</i>	Absent
2.	<i>P.auriginosa</i>	Absent
3.	<i>E.coli</i>	Absent
4.	<i>S.abony</i>	Absent

Table No 13: Showing Results of Microbial Load Test of Sitopaladi churna

Sr. no	Drug Name	Total Bacterial count	Total Fungal count
1.	Sitopaladi churna	Under Limit	Under Limit

Discussion:

Raw materials:

All the raw drugs analysis was done in central research facility and saw within Value of this drug API limit except Khanda-sharkara & Vamsalochana.

Microbial study of raw drugs:

- **Total microbial load:**
a. Value shown under limit of all individual drugs as per the Indian Pharmacopeia.
- **Microbial limit test:**
a. Value shown under limit of all individual drugs as per the Indian Pharmacopeia.

Microbial study:

a.Total microbial load:

In the sample value showed under limit. [I.P].

b. Microbial limit test:

Results shown under limit as per the Indian pharmacopeia

Conclusion:

Minimal variations seen in the physico chemical and phytochemical & microbial load of the sample and result of microbial limit was under limit as per the Indian pharmacopeia.

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