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DEVELOPMENT OF SITOPALADI KHANDA (GRANULES) FROM SITOPALADI CHURNA AND ITS ANALYTICAL STUDY

Dr. Kashimali Nadaf[1]*, Dr. Mahantesh B. Rudrapuri[2] and Dr. G. Vinay Mohan[3]

[1]M.D. (Ayu.) Scholar, Department of Post-Graduate Studies in Rasashastra & BhaishajyaKalpana, Shri Shivayogeeshwar Rural Ayurvedic Medical College & Hospital, Inchal, Karnataka, India.
[2]M.D. (Ayu), Professor, HOD Department of Rasashastra and BhaishajyaKalpana, Shri Shivayogeeshwarrural Ayurvedic Medical College & Hospital, Inchal, Belgavi, Karnataka, India.
[3]M.D. (Ayu), Principal Shri Shivayogeshwar Rural Ayurvedic Medical College Inchal. Tal- Saundatti Dist- Belagavi, India.

***Corresponding Author: Dr. Kashimali Nadaf**
M.D. (Ayu.) Scholar, Department of Post-Graduate Studies in Rasashastra & BhaishajyaKalpana, Shri Shivayogeeshwar Rural Ayurvedic Medical College & Hospital, Inchal, Karnataka, India.

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ABSTRACT
The research work entitled, development of SitopaladiKhanda (granules) from Sitopaladichurna and its analytic study is a new dosage form of churna. In a sophisticated urban society, purchase manufactured drugs is preferred to the time consuming preparations as a result demand for finished product lead to new phenomenon which is manufacturing ayurvedic drugs currently more importance is giving for the availability, palatability, smallest dose, easy administration increased bio availability and mainly self-life of the formulations.In this view as per the need of time there is a need to modify the Sitopaladichurna into granular form. In the present study Sitopaladichurna was prepared in accordance with description of sharangadharasamhita. After that Sitopaladi granules were prepared. Sitopaladi granules were investigated for loss on drying, ash value, acid insoluble ash, water soluble extract, alcohol soluble extract, PH, fat content, reducing sugar, water soluble ash, Particle size, TLC, HPTLC and organoleptic charactestics was used to determine the purity of the modified form of Sitopaladikhanda (Granules). Analysis of the data obtained from the analytical study indicated the parameters will be usefull for standardisationof Sitopaladikhanda (Granules).

KEYWORDS: SitopaladiKhanda; Pharmaceutico-Analytical Standardization; Sitopaladi Churna.

INTRODUCTION
Ayurveda is one of the Indian medicinal system literally means “science of life and longetivity”.Bhaishajya is the weapon offered by the Ayurveda to conquer the overspreading deadly diseases.[1] Bhaishajya is one among chikitsachatuspada[2], without which the suppression of diseases not possible.

Ayurvedic medicines are formulated only after centuries of trials and experiments and these are recognised as free from toxicity. But the use of these in the natural form is not practicable. Thus ancestors developed the techniques of modifying them into the suitable, favourable form and shape.

Bhaishajyakalpana which is concerned with changes in therapeutic efficacy in accordance with its different formulation. In broad sense it also includes study of adjuvant different procedures and its therapeutic action.[3]

Acharya charaka has mentioned panchavidhakashayakalpana.[4] Acharya vagbhata explain that a dry powder filtered through a fine cloth is called as churna. churna is a synonym of suskakalka[5] and explained as one among the type of panchavidhakashayakalpana.Sitopaladichurna is explained in text of sharangdharsamhita[6], charaka samhitha[7] which is indicated for the chikitsa of swasa, kasa, rajayakshma, hastapadadaha and angadaha etc.

Currently more importance is giving for the availability, palatability, smallest dose, easy administration, increased bioavailability and self-life of formulation.Churnaself life is only for 2 months.[8] The development of bhaishajyakalpana in ayurvedic system to improve the formulations to challenges Sitopaladichurna is converting into granular form its self-life is one year.[9]

AIMS AND OBJECTIVES
- To prepare Sitopaladichurna as per classical method.

- To prepare Sitopaladikhanda (granules) from Sitopaladichurna. To test the Physico-chemical analysis of both samples of Sitopaladikhanda (granules) that is Sitopaladikhanda with added sugar and Sitopaladikhanda without added sugar.

MATERIALS AND METHODS

Materials

Contents of SitopaladiChurna and their Properties

SL.NO	DRAVYA	RASA	VIRYA	VIPAKA	GUNA
1	Sitopala	Madhura	Sheeta	Madhura	Snigda,Lagu.
2	Vamsalocana	Madhurakashaya	Sheeta	Madhura	Ruksha,Lagu,Tikshna.
3	Pippali	Katu	Anusshnasheeta	Madhura	Lagu, Snuhi.
4	Ela	Katu Madhura	Sheeta	Madhura	Lagu,Ruksha.
5	Twak	Madhura Tikta Katu	Ushna	Madhura	Lagu,Ruksha,Tikshna.

Dravya scientific name part used and Praportion

SL.NO	DRAVYA	SCIENTIFIC NAME	PART TO BE USED	PRAPORTION
1	Sitopala	Saccharumofficinarum	Candy	16 parts (192 gm)
2	Vamsalocana	Bambusaarundinaceae	Inner part	8 parts (96 gm)
3	Pippali	Piper longum	Seed	4 parts (48gm)
4	Ela	Elettariacardamoummaton	Seed	2 parts (24 gm)
5	Twak	Cinnamomumzeylanicumblume	Bark	1 part (12gm)

METHODS

PREPARATION OF SITOPALADI CHURNA[10]

- All the ingredient or drug of the sitopaladichurnai,e Sitopala-16part[192gm],Vamsalocana-8part[96gm], Pippali- 4 parts [48gm], Ela- 2 parts [24gm], Twak-1 part [12gm] are taken separately.
- Pounded well in Ulukhalayantra [pounding machine] and siered.
- Sieredchurna will be filter through a clean cotton cloth.
- Mix all the ingredients or drugs to form a homogenous mixture.
- The homogenous mixture of sitopaladichurna will be taken in a air tite container.

Method of preparation of Sitopaladikhanda(Granules)[11]

A. Sitopaladikhanda (granules) with added sugar

- The sweetening agents like khandasarkara is taken equal quantity of Sitopaladichurna and dissolved in liquid preparation over mild fire in a clean bigger vessel.
- The blend filtered once through a clean cloth to get rid of physical impurities present in the sweetening agents.
- The filtrate is again boiled and reduced over mild fire to a thicker consistency of 3 to 4 threads.
- Fine powder ofsitopaladicurnaia added little by little with continousstrirred well to form a homogenous mixture.
- When the preparation will be cool, packed in dry airtight wide mouthed container and preserved.

B. Sitopaladikhanda (granules) without added sugar

- The sweetening agents like khandasarkara present in Sitopaladichurna is taken seperately and dissolved in liquid preparation over mild fire in a clean bigger vessel.
- The blend filtered once through a clean cloth to get rid of physical impurities present in the sweetening agents.
- The filtrate is again boiled and reduced over mild fire to a thicker consistency of 3 to 4 threads.
- Fine powder of remaining ingredients of sitopaladichurnaia added little by little and continousstrirred well to form a homogenous mixture.
- When the preparation will be cool, packed in dry airtight wide mouthed container and preserved.

Pharmaceutical study of Sitopaladikhanda (Granules)

- Sitopaladichurna preparation is explained in sharangadharasamhita this is prepared by using drugs like sita, vamsalochona, pippali, ela, twak. The drugs were taken in appropriate quality. 80 # mesh is used for the formulation of the churna preparation after the preparation of Sitopaladichurna preparation of Sitopaladikhanda (granules) is made by 40 # mesh. Sitopaladikhanda(granules) were prepared as SitopaladiKhanda with added sugar (A) and SitopaladiKhanda without added sugar ((B) and were analysed separately.
- Physico chemical parameters of the Sitopaladikhanda(granules) were suggestive of the quality and increased self life.

Physico chemical study of two samples of Sitopaladikhanda (granules): Organoleptic Characteristics

- The developed formulation was granules form and greyish white in colour sweet and pungent in taste, fragrant in odour but in sample without added sugar pungent odour
- The remaining observations were similar to sample with added sugar.

LOSS ON DRYING

- Moisture content of both samples A and B was found 2.697% and 2.345% it indicates low moisture content of the both samples.

ASH VALUE

- Ash value of both samples A and B was found 19.688%, 24.856% respectively. This value was found to be reasonably low, which indicates low contamination. It is criteria for identifying the purity of the drugs. Total ash is inclusive of extraneous matter such as sand, soil etc adhering to the herbal drug.

WATER SOLUBLE ASH

- Water soluble ash of both samples A and B was found 2.864% and 3.399% respectively. This shows normal quality of the drugs of the Sitopaladikhanda (granules) and presence of more active principle in the sample.

ACID INSOLIBLE ASH

- Acid insoluble ash of both samples A and B was found 16.8% & 22.18% respectively. This indicative of less amount of non-physiological components like silica less adherent dirt and sand particles of the Sitopaladikhanda (granules).

WATER SOLIBLE EXTRACTIVE AND ALCOHOL SOLIBLE EXTRACTIVE

- Water soluble extractive of both samples A and B were found to be 76.7% & 56.5% and alcohol soluble extractive of both samples of Sitopaladikhanda(granules) were found to be 3.7% & 6.3% respectively indicating considerable amount of polar compounds in the samples.

P^HVALUE

- PH of both samples A and B was 8.9% & 9.15% respictely, which is Alkaline or basic. This increases theintegraty of gastric mucosa, and used after food for the purpose of gastric acid balance.

REDUCING SUGAR

- Reducing sugar of both samples A and B was present 3.9% & 1.6% respectively.

FAT CONTENT

- Fat content of both samples A and B was found to be 2.6% & 2.4% respectively.

TLC

- TLC of both samples A and B reveals the presence of phytoconstituents in the individual ingredients.

HPTLC

- HPTLC of both samples A and B was performed to get finer results to get finer details.

PARTICLE SIZE

- Particle size of both samples A and B was found to be 308- 409 micron and 298-358 micron respectively. For using 40 # mesh the value is nearly equal to original value.

RESULTS

- The results were assessed in following section. Granular form of SitopaladiKhanda was subjected to Physico chemical analysis. The results are tabulated in following tables.
- Physico chemical analysis of both samples of Sitopaladikhanda(granules) A and B was.

Sr No	TEST PARAMETER	(A) SITOPALADI KHANDA (GRANULES) WITH ADDED SUGAR	(B) SITOPALADI KHANDA (GRANULES) WITHOUT ADDED SUGAR
1	Form	Granules	Granules
2	Colour	Greyish white	Greyish white
3	Taste	Sweet & Pungent	Sweet & Pungent
4	Odour	Fragrant	Pungent
5	Loss on drying	2.697 %	2.345 %
6	Ash value	19.688 %	24.856 %
7	Acid insoluble ash	16.820 %	22.185 %
8	Water soluble extractive	76.707 %	56.388 %
9	Alcohol soluble extractive	3.745 %	6.391 %
10	P^H	8.98	9.15
11	Fat content	2.601 %	2.408 %
12	Reducing sugar	3.901 %	1.643 %
13	Water soluble ash	2.864 %	3.399 %
14	TLC	0.54	0.54
15	HPTLC	0.12	0.12
16	Particle size	308-409 micron	298-358 micron

DISCUSSION

- Development of Sitopaladikhanda (granules) from SitopaladiChurna and its analytical study was taken in this study. Samples selected for the study shows that analytical standards were in accordance with API standards.
- Physico chemical parameters of SitopaladiKhanda (Granules) were suggestive of the quality and increased shelf life. Parameters results of Powered drugs were as per the guidelines of Ayurvedic pharmacopoeia of India.

CONCLUSION

- The analytical parameters were within the parameters mentioned in the API and were suggestive of the genuine of the raw material used and the quality of the end product obtained. The data obtained from Analytical parameters of SitopaladiKhand (Granules) can be considered as reference for its standardization.
- The Physico chemical parameters such as loss on drying, Total Ash value, water soluble ash, acid insoluble ash, pH, Alcohol soluble extractives, Water soluble extracives, Acid insoluble ash, Water soluble ash, TLC, Fat Content, Reducing Sugar, HPTLC, Particle size and Organoleptic characteristics can be efficiently used for standardization of SitopaladiKhand Granules.

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