


DOOSHIVISHARIAGADA - A HERBO-MINERAL COMPOUND AND ITS STANDARDIZATION

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<p>* For Correspondence:</p> <p>Shilpa.Hukkeri, PG Scholar, Department of AgadaTantra, KLE's Shri BMK Ayurveda Mahavidyalaya, Belgaum, karnataka.</p>	<p>ABSTRACT</p> <p>New upsurge of interest in Ayurveda and its rapidly increasing public use has given rise to many newer issues and challenges. One being lack of standardization and there is a need to develop it. Central council of Research in Ayurveda and Siddha (CCRAS) has given preliminary guidelines for standardizing formulations.</p> <p>This present paper reports on standardization of DooshivishariAgada (DVA), an Ayurveda Herbo-mineral compound. Ingredients of DVA were procured, authenticated and prepared in classical way by giving bhavana with the qwath prepared by same ingredients of Agada and consequently analysed for Organoleptic, physical characteristics, physiochemical, phytochemical screening, TLC and HPTLC was done for standardization. The phytochemical constituents found to be present in the finished product will possibly facilitate for understanding mechanisms of pharmacological action.</p> <p>KEY WORDS: Dooshivisha; Agada; Agada tantric; Visha</p>
<p>Received: 02-04-2014 Accepted: 22-06-2014</p>	
<p>Access this article online</p>	
<p>Website: www.drugresearch.in</p>	
<p>Quick Response Code:</p> 	

INTRODUCTION

Dooshivishari Agada is a compound herbo-mineral preparation which is explained in context of Dooshivisha.(Table no:1)¹A condition where in a visha (toxins/poisons) due to improper elimination from body or when low-potent toxins by virtue of which are battered by climatic conditions settles in body. This settled visha produces ailments like avipaka(indigestion), mandala (Erythematous eruptions frequently) and vikaranabahuprakaran (various ailments) when triggering factors are congregate².Herbal formulations have been in use by the majority of Indians since ancient times and also increased inclination towards herbal formulations in present scenario is also seen. With an increase demand

for safer drugs, attention has been drawn to the quality, safety, efficacy, and standards of the Ayurvedic formulations. The development of traditional system of medicine with perspectives of safety, efficacy and quality will help not only to preserve this system heritage but also to rationalize the use of natural products in healthcare. The need of quality control for Ayurvedic drugs is due to the fact that the preparation of drug according to the ancient method has been reduced due to the commercialization of Ayurvedic pharmacy in present era³.Hence the present study was carried out to develop standardization for DooshivishariAgada.

Table no 1: Ingredients of Dooshivishari Agada⁴

SI	Dravya	Botanical Name	Official part
	Pippali	Piper longum Linn.	Phala(Fruit)
	Pippalimula	Piper longum Linn.	Mula (root)

	Dhyamaka	Cymbopogonmartinii (Roxb.) Wats.	Patra(Leaves)
	Jatamamsi	NardostachysjatamamsiDC.(N. grandiflora)	Mula(Root)
	Lodra	SymplocosracemosaRoxb.	Twak (Stem Bark)
	Ela	ElettariacardamomumMaton	Phala(Fruit)
	Suvarchika	Tribulusterrestris Linn.	Phala(Fruit), Mula(Root)
	Katunnatum	Oroxylumindicum (Linn) Benth.ExKurz.	Mulatwak (Root bark)
	Natam	Valerianawallichii D.C.	Mula(Root)
	Kusta	Saussurealappa C.B. Clarke.	Mula(Root)
	Yastimadhu	Glycyrrhizaglabra Linn.	Mula (Root)
	Rakhtachandana	Pterocarpussantalinus Linn. f.	Khandasara (Heartwood)
	Gairika	Red ochre	

Materials and Method

Materials: Raw drugs of DooshivishariAgada required for preparation were procured from market dealer and authenticated at AYUSH approved Drug Testing Laboratory, Solvents and chemicals of analytical grade were procured from E. Merck and S.D. fine chemicals, Mumbai for analysis of DooshivishariAgada

Methodology: Preparation of DooshivishariAgada (DVA).

1. Authenticated drugs were pulverised to powder and then sieved through 120 seive.
2. Gairika was subjected to shodhana according to Rasa Ratna⁵Sammuchaya by ghrithabharjana (ghritha was homemade)
3. All the individual choornas (100 gm each) were mixed with gairika (100 gm) and bhavana was given. Bhavanadravya was not mentioned hence the Qwath of the same drugs. (ie the bharad of same ingredients of DooshivishariAgada was taken forkashaya).
4. Qwath was prepared as classical way with ratio of 1 part drug and 8 parts water reduced to ¼ the quantity and used in QS⁶.
5. 8 hours Bhavana was done daily for 7 days in Bhaishajyakalpana laboratory.
6. Daily observation in the required bhavanadravya, odour, colour, taste and consistency of Agada along with factors like Humidity and temperature were noted down.
7. On 8th day the vati were prepared by hand rolling and shade dried in Stainless steel Plates (which were used to dry Agada were given dhoopana with guggulu.)
8. Dried DooshivishariAgada was then kept in clean and dry sterilized glass bottles.

Analysis of DooshivishariAgada:

Analysis of DooshivishariAgada was carried out at AYUSH Approved Central research centre, Gairika was sent to Test house centre at Bangalore for quantity estimation of Fe %. DooshivishariAgada was subjected to following analysis: Organoleptic characters (colour, odour, taste and consistency), Quantitative parameters (Weight variation, Tablet disintegration time, hardness and friability.) Microbial limit test; Physicochemical properties (pH at 5% aq solution, loss on drying, total ash, acid insoluble ash, water soluble ash, water soluble extractive and alcoholic extractive valve), Qualitative parameters (inorganic elements organic), Fluorescence analysis of DooshivishariAgada powder, Thin Layer Chromatography⁷- RF values of DooshivishariAgada. HPTLC (Natural Remedies–Bangalore)

Photos: Preparation of DooshivishariAgada- Photo Plate 1.

Observations and Results

Gairika was sent to Test house centre at Bangalore for quantity estimation of Fe % it showed presence of **18 % Fe**. The average weight of DVA was 250 mg, hardness of vati was 7.4 kg/cm², disintegration time was 45 min and friability was 0.13 %.

Table No II: Organoleptic Characters Of DooshivishariAgada

Sl. No.	Parameters	DooshivishariAgada
1	Color	Light Brown
2	Odor	Characteristic
3	Taste	Bitter
4	Consistency	Hard

Table No III: Quantitative Parameters of DooshivishariAgada

Sl.	Parameters	DooshivishariAgada
1	Wt. Min Wt.	230 mg

	Variation Test (mg)	Max Wt.	270 mg
		Average Wt. (20 Tab)	250 mg
2	Tab. Disintegration Time (min)	45 min	
3	Hardness (Kg/cm ²)	7.4	
4	Friability (%)	0.13%	

Table no IV: Physicochemical Properties of DooshivishariAgada

Sl. No.	Sl. No.	Materials	DooshivishariAgada	
			DL	UV 254nm
	1	Powder As such	LB	DB
	2	P + 1N. NaOH	DB	GB
	3	P + Picric Acid	B	B
	4	P + Acetic Acid	LB	B
	5	P + 1N. HCL	LB	DB
	6	P + 1N. HNO ₃	LB	DB
	7	P + Iodine 5%	DB	DB
	8	P + 5% FeCl ₃	DB	DB
	9	P + 50% HNO ₃	DB	DB
	10	P + Methanol	LB	DB
	11	P + Methanol + NaOH	LB	GB
	LB: light brown B : BROWN DB: dark brown greenish brown BL: black DBL : dark brown			
	Parameters			
1	pH at 5% aqueous solution		4.6	
2	Loss on Drying at 110 ^o C (% w/w)		12.57 % w/w	
3	Total Ash (% w/w)		15.96 % w/w	
4	Acid Insoluble Ash (% w/w)		9.4 % w/w	
5	Water Soluble Ash (% w/w)		2.9 % w/w	
6	Water Soluble Extractive (%w/w)		41.614 % w/w	
7	Alcohol Soluble Extractive (%w/w)		25.76 % w/w	

Table no V: Qualitative Parameters Of DooshivishariAgada

Sl. No.	Parameters	DooshivishariAgada
1	Carbonate	Absent
2	Calcium	Absent
3	Magnesium	Absent

4	Potassium	Absent
5	Iron	Present
6	Sulphate	Present
7	Chloride	Absent
8	Nitrate	Present
9	Sodium	Present

Table no VI: Shows Preliminary phytochemical screening:

Sl. No	Parameters		DooshivishariAgada	
			Aqueous	Alcoholic
	Carbohydrates	Molish	Present	Present
	Reducing Sugar	Benedicts	Brick red	Brown
	Monosaccharides	Barfords	Present	Present
	Pentose	Bails	-	-
	Hexose	Selwinoffs	-	Present
	Non-reducing sugar	Benedicts	-	-
	Polysaccharide	Iodine test	-	-
	Proteins	Millons test	-	Present
	Amino Acids	Ninhydrin test	-	-
	Steroids		Present	Present
	Glycoside	Cardiac Gly. Coumarin	Absent	Present
	Saponins		Present	-
	Alkaloids	Dragandroff's	Present	Present
	Tannins & phenolic		Present	Present

Table noVII: Fluorescence Analysis of DooshivishariAgada

Table VIII: HPTLC of DVA: HPTLC of Alcoholic extract DVA at 254nm wave length.

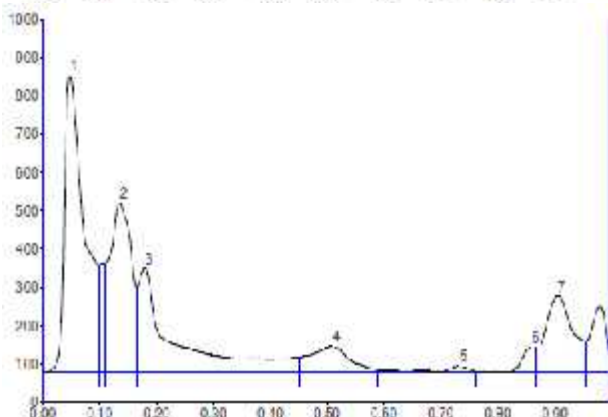
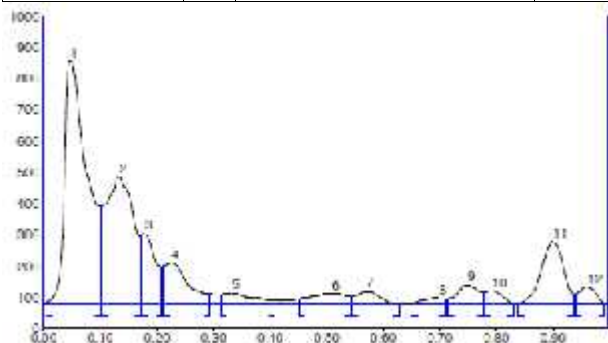
T1- Alcoholicext (DVAII) T2- Aqueous ext (DVAI); Mobile phase-Toluene : Ethyl acetate (90:30) in ml; Spraying reagent-Anisaldehyde sulphuric acid

Table no IX: Illustrates TLC - Profile of DVA with Rf Values With solvent system Toluene: Ethyl Acetate (9:3).

Table no X: HPTLC of Aqueous and Alcoholic extract DVA at 366 nm wavelength

Spots at UV 254 nm	S W	Spots at UV 366 nm	LW
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0.02	0.02- Yellow
0.10	0.03- Brown
0.12	0.06- Light blue
0.17	0.09- Light green
0.22	0.13- Light blue
0.33	0.16- Blackish brown
0.37	0.22- Light Yellow
0.49	0.25- Light blue
0.61	0.30- Violet pink
	0.37- Light blue
	0.49- Light Yellow
	0.58- Fluorescent blue
	0.61- Fluorescent pink
	0.68- Light blue
	0.70- Violet
	0.75- Yellow
	0.77- Violet
	0.80- Fluorescent Blue
	0.84- Violet
	0.87- Light Blue
	0.90- Pink
	0.96- Light Blue



Discussion

DooshivishariAgada was having a characteristic odour of *Tagara* and *Dhyamakaduring* preparation and by end of preparation it was aromatic may be due the presence of volatile ingredients. DVA was having initially *Katu* and *Madhurapradhana* rasa later at the end of preparation (*Bhavana*) it had *Tikta* and *Kashaya* rasa *pradhana*. Though DVA has ingredients of equal percentage of rasa *Pradhanatha* but end result of preparation was *tiktarasa* as evidenced by presence of tannins and phenols in qualitative test. This gives us clue that why DVA is told in visha conditions as *Tikta rasa is Vishagna*⁸. Texture of the pill was smooth indicating the surface uniformity without cracks. This is primary character to assess the quality of pills⁹. Solubility test will indicate about the bioavailability and it was seen that water soluble extract 41.64 %w/w was more in comparison to alcoholic extract 25.76% w/w showing that DVA has more bioavailability in water media. Presence of inorganic substances in the formulation is indicated by Ash value, which plays important role in standardization, more Ash value denotes higher inorganic substances, in present sample which is slightly high 15.96 % w/w which may be due to presence of *Gairika*. Phytochemical tests are done to know the presence of functional group, which play a vital role in expression of therapeutic efficacy. DVA showed presence of Carbohydrates, reducing sugars, proteins, glycosides, steroids, alkaloids and tannins & phenols. Along with these above Organoleptic, Quantitative and Qualitative, preliminary TLC and HPTLC may be considered as reference standards for future validation of this formulation.

Conclusion

Due to increased demand and marketing of the Herbal medicines around the world, it has become a necessary step to take actions in order to set up standards for the herbal medicines. Thus it will maintain safety, efficacy and quality which help not only to preserve this system heritage but also to rationalize the use of natural products in healthcare. As *dooshivishariagada* is the unique formulation which is widely used in the clinical practice. The present study standards can be set as standards for *dooshivishariagada* and here by used for future considerations.

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Cite this article as:

Hukkeri, S. and Savalagimath, M.P. (2014).DooshivishariAgada-A Herbo-Mineral compound and Its. Indian J. Drugs, 2(2), 39-43.