Preliminary evalution of ayurvedic preprations of taila 's and churna's

Kuchekar Mohini[1*], Upadhye Mohini[2], Dherenge Kanchan[3]

[1,2]Assistant Professor, [3]Under Graduate Students, [1]P.E.S.'S Modern College of Pharmacy, Nigdi, Pune, [2,3]P.E.S.'S Modern College of Pharmacy (For Ladies) Moshi, Pune, Maharashtra, India

***Corresponding Author: Upadhye Mohini**
Email: phanse_mohini@yahoo.co.in

Abstract
The Potential of ayurveda's existence in the medical meadow is strong as more and more researchers, medical scientists and physicians categorise the pitfalls of the conventional medicine. In the present study, we have evaluated some ayurvedic preparations of Taila and Churna for Loss on drying, Ash value, Acid insoluble ash value, Water soluble extractive value, Alcohol soluble extractive value, Refractive Index, Saponification value, Iodine value and Acid value. It was concluded that, among all the churna preparations minimum alcohol extract (%w/w) content and Ash value was found in Avipattikar churna. In Taila preparations, Narayna Taila shows minimum iodine value. The maximum acid value found in Anu Taila and Nirgundi Taila and maximum saponification value found in Anu Taila.

Keywords: Taila preparations, Refractive index, Saponification value, Iodine value and Acid value.

Introduction
Herbal formulations are more appealing because they work without alcohol, artificial preservatives, flavors or colors. Herbal products have shown promising results with minimal side effects. Also, the presence of naturally occurring phytochemicals has an additional effect on inflammatory pathways and antioxidant potential, making them eligible to be used as effective anti-gingivitis agents. These herbal ingredients are abundantly available.[1] The lack of appropriate clinical studies of Ayurvedic treatments is heavily criticized by Western physicians. Western physicians and medical scientists claim that very few clinical studies exist and those that do exist show, at best, questionable results. Their main concern against Ayurveda is that its reliance on pure observation, experimentation, and philosophical emphasis on individualizing treatments (i.e. making different treatments for different people for the same disease) create consistency and unreliable data on the efficacy of the treatments. Although Ayurved as strength comes from the fact that it is highly individualized form of medicine, this is a disadvantage in the context of the western world.[2-5]

Promise of ayurveda's presence in the American medical field is strong as more and more physicians, researchers and medical scientists recognize the pitfalls of the conventional medicine. Many, but not a majority of physicians have started to incorporate a limited number of safe ayurvedic practices. Hopefully, in the near future, many more conventional doctors will be open to use ayurveda to compliment there conventional medicine and make the healing process much better.

In the current study, an attempt was made to evaluate some sprirual ayurvedic preparation of churna and Taila for the estimation of Loss on drying, Acid insoluble ash, Water soluble extractive, Alcohol soluble extractive, Ash, Refractive Index, Iodine value, Saponification value, and Acid value. Establishing quality and standard parameter like acid value and other constituent of these preparations are highly significant.

Materials and Methods
All marketed preparations like Avipattikar Churna, Sitopaladi Churna, Avipattikar Churna, Anu Taila, Nirgundi Taila and Narayan Taila were purchased from Pune. The churna were evaluated for Colour, Odour, Taste, Ash, Acid insoluble Ash, Water soluble Ash, Alcohol extract and Loss on drying. whereas, Taila were evaluated for Colour, Odour, Taste, Loss on drying, Acid value, Saponification value, Iodine value and Refractive index as follows:

Determination of Ash Value
Incinerate about 2 to 3 g, accurately weighted, of the prepared sample in a tarred platinum or silica dish at a low temperature until obtained in his way extract the charged mass with hot water, collect the residue on an ash less filter paper, incinerate the residue and filter paper add the filtrate, evaporate to dryness and ignite to constant weight at a low temperature. Calculate the percentage of ash with-reference to the moisture free drug.[6-8]

Acid insoluble ash Value
Boil the ash of 5 min with 25 ml of dilute-hydrochloric acid (6N) collect the insoluble matter in a grouch crucible or on an ash less filter paper, wash with hot water and ignite to constant weight at a low temperature. Calculate the percentage of acid-insoluble ash with reference to the moisture free drug.[6-8]

Determination of Water Soluble Extractive value
Macerate 5 g. of the drug in coarse powder, with 100 ml of chloroform water, in a closed flask for twenty four hours, shaking frequently during six hours. Filter rapidly, taking precautions against loss of solvent evaporate 25 ml of the filtrate to dryness in a tarred-shallow bottomed dish, and dry at 100 C constant weight. Calculate the percentage of water soluble extractive with reference to the moisture free drug.[6-8]

Determination of alcohol-soluble extractive value
Proceed as directed for the determination of water soluble extractive using alcohol of the specified strength instead of chloroform water.

Loss on drying
Digest pure quartz sand that passes through No. 40 but not No. 0 sieve with hydrochloric acid, wash acid free, dry ignite, Preserve in stoppered bottle.[6-8]

Acid value
The acid value of an oil or fat is defined as the number of milligrams of potassium hydroxide required to neutralize the free with ether. Mix 25 ml ether with 25 ml alcohol (95 per cent) and 1 ml of 1 % phenolphthalein solution and nutrition and neutralize the free acid in 1 gram of the sample of the sample. Sodium hydroxide shaking constantly unit a pink colour which persists for fifteen seconds is obtained. Alternatively, boiling neutral alcohol can be employed as solvent and the free fatty acids titrated which the liquid is still hot. The free fatty acid content is also express as F.F.A. calculated as oleic acid % (1ml N/10) alkali = 0.028g oleic acid.[9]

$$\text{Acid value} = \frac{\text{No of ml of N/10 alkali used}}{\text{Weight of sample in g}} \times 5.61$$

Saponification value: The saponification value of an oil or fat is defined as the number of milligrams of potassium hydroxide required to neutralize the fatty acids resulting from the complete hydrolysis of 1 gram of the sample. Alcoholic solution of potassium hydroxide: Dissolve 35-40g potassium hydroxide in 20ml of water and dilute to one litre with alcohol (95%). Allow to stand overnight and decant off the pure liquid. Weight 2g of the oil or fat into a conical flask and add exactly 25 ml of the alcoholic potassium hydroxide solution. Attach a reflux condenser and heat the flask in boiling water for one hour shaking frequently. Add 1 ml of phenolphthalein (1%) solution and titrate the excess alkali with N/2 hydrochloric acid.[9]
Saponofication value=28.05(b-a)/w

Iodine value
The iodine value is the number of which expressed in grams the quantity of halogen calculated as iodine which is absorbed by 100gm of the substance under the described condition. Iodine monochloride method or wijs method: Place an accurately weighed quantitythe substance under examination in dry 500ml iodine flask add 10 ml carbon tetrachloride and dissolve add 20 ml of iodine monochloride solution, insert the stopper and allow to stand in dark at tempratupe between 150-250 for 30 min. Place 15 ml of potassium iodide solution in the cup top carefully remove the stopper, rinse the stopper and the sides of the flask with 100 ml of water. Shake and titrate with 0.1M sodium thiosulphate using starch solution, added towards the end of the titration as indicated. Note the number of ml required (a). repeat the operation without the substance under examination and note the no of ml required (b).[9]
Iodine value = 1.269 (b - a) /w

Table 1: Detail information of sample

S. No	Brand name	Company	Main ingredients	Uses
1	Avipattikar Churna	Baidyanath Shree Ayurveda Bhavan Pvt Ltd. Nagpur.	Sunthi, Pippali, Merica, Amla Musta, Tejpatta, Lavanga.	Relieves acidity, laxative, increase appetite
2	Sitopaladi Churna	Zandu Pharmaceuticals ltd. Gujarat	Tvak, Pippali, Vamsa, Iksu, Suksmaila.	Relieves headache nausea
3	Avipattikar Churna	Zandu Pharmaceuticals ltd. Gujarat	Sunthi, Pippali, Merica, Amla, Musta, Tejpatta, Lavanga	To relieve acidity, laxative, increase appetite
4	Anu Taila	Ayurveda Rasashala Pune	Tejpatta, Kamal Tiphala, Renuka, Salavn, Shewtchandan,	Relieves the pain, used in backache, inflammation.
5	Nirgundi Taila	Baidyanath shree ayurveda bhavan pvt ltd. Nagpur.	1;Nirgundi, 2;Neem, 3;Anantmool, 4;Natural sesame oil as base	Relieves the pain, used in backache, inflammation
6	Narayan Taila	Ayush	Ashwagandha, Dashmool, Bala, Shatavari, Sesame oil	Useful for muscular pain, pain in joints and swelling.

Table 2: Evaluation study of Avipattikar, Sitopaladi and Avipattikar Z Churna

S. No	Parameter	Churna		
		Avipattikar	Sitopaladi	Avipattikar Z
1.	Colour	Dull white	Dull white	Yellowish
3.	Odour	Unpleasant	Unpleasant	Characteristic
4.	Taste	Pungent	Pungent	Pungent
5.	Ash value	7.5%w/w	24.8%w/w	6.0%w/w
6.	Acid insoluble Ash value	1.2%w/w	23%w/w	1%w/w
7.	Water soluble Ash value	57%w/w	55%w/w	58%w/w
8.	Alcohol extract value	26%w/w	29%w/w	27%w/w
9.	Loss on drying	6%	5%	6.5%

Fig. 1: Determination of Ash value of Churna

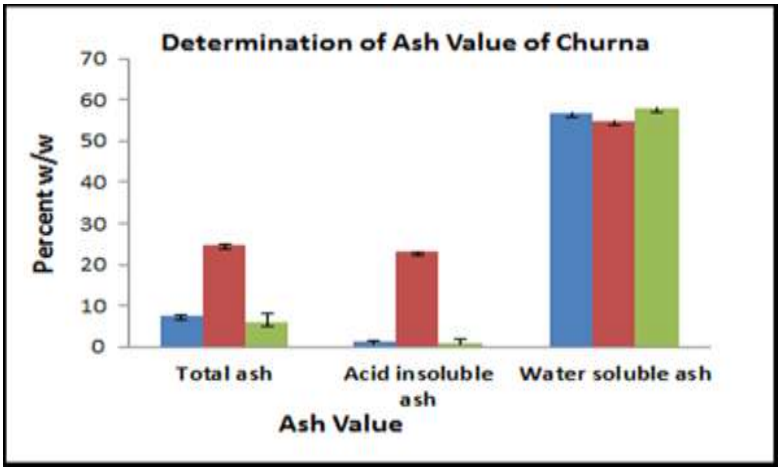

Table 3: Evaluation study of Anu, Narayana, Nirgundi Taila

S. No	Parameters	Taila		
		Anu	Narayana	Nirgundi
1.	Colour	Yellowish	Bronwish red	Pale yellow
2.	Odour	Unpleasant	Characterisric	Pleasant
3.	Taste	Tasteless	Unpleasant	Characteristic
4.	Loss on drying	0.8%	0.9%	0.8%
5.	Acid value	6%	4.1%	7.8%
6.	Saponification value	224	201	218
7.	Iodine value	91.79%w/w	113.24%w/w	100.25%w/w
8.	Refractive index	1.464	1.464	1.465

Discussion

All the comparative results are summerised in Tables 2,3 and Fig. 1. Among all the samples minimum alcohol extract (%w/w) value was found in Avipattikar Churna (26% w/w) in Churna when compared with Sitopaladi, Avipattikar Z Churna. Among all the samples Sitopaladi Churna shows maximum (24.8%w/w) ash value and minimum moisture content (5%). In evaluation of Taila maximum acid value was found in Anu Taila (6%) and Nirgundi Taila (7.8%) as compare to Narayna Taila (4.1%). The maximum saponification value was found in Anu Taila (224). The minimum Iodine value was found in Anu Taila (91.79%w/w).

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Conflict of Interest: None.

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