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Research Article

A PHARMACEUTICO-ANALYTICAL STUDY OF *SHIRISHADI SHARIR DAURGANDHYAHARA YOGA* (SSD)

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ABSTRACT

The importance of beauty and personality is increasing now a day as it is a competitive era. The urge of need of using perfumery and cosmetic was nurtured when person started using them. Need of beautification was correlated with attraction. The Indian tradition of perfumery and cosmetic is very old. Sweating is a normal physiological process; sweat is 99% water with some salt (NaCl), vitamin C, anti-bodies, traces of metabolic wastes and lactic acid composition. It's a natural process to cool the body temperature. Thermal and emotional factors promote sweating. The moist environment created by Hyperhidrosis condition, creates an ideal conditions for an overgrowth of bacteria. Hyperhidrosis condition, bacteria break down certain proteins in the sweat into acids, so it is not the bacteria that stink. It is the by-product of the bacteria breaking down the protein. As we are living in the industrial era, where the problem of global warming a matter of great concern and is increasing radically, as a result of increasing temperature. People are suffering from excessive sweating and some people also posses bad odor with sweating. This situation will bring a huge psychological and social burden, because it will interferes with daily activities. Many people do not seek medical help because they do not know that their condition requires medical intervention. Due to excessive sweating it can cause various infections. Many people use antiperspirants products to control sweating and body odor. Some chemical antiperspirants are effective; however, the side effects like irritations, discoloration allergy, are also obvious.

INTRODUCTION

The word cosmetic is derived from the Greek word **"Kosmeticos"** meaning having the power to arrange skilled in decorating. The term cosmetics article intended to be rubbed, poured sprinkled or sprayed or otherwise applied to the human body for beautifying, cleansing. Sweat is the secretion of cutaneous sweat glands, which are innervated by cholinergic sympathetic fibers. Excessive sweating us may lead to loss of sodium and water.

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In humid heat, the sweating curs, but is not evaporated and as the body temperature is not lowered (because of the non-evaporation of sweat) further sweating occurs and combined deficiency of Sodium and water develops. Hyperhidrosis and Bromhidrosis both have a high psychosocial impact on those who suffer from these types of functional deregulation of the sweat glands.

Churna Kalpana[1,2]

The term *Churna* may be applied to the powder to mixture of two or more drugs or single drug, which might be powdered one after the other previous to their being blended to homogeneity. *Churna kalpana* is a prominent preparation in pharmaceutical world of Ayurveda and macerated without any liquid, its miles taken into consideration as an *Upakalpana* of *Kalka kalpana.* Where ingredients are dried well and grinded without adding water or

any other liquid, the fine form of medicine thus obtained considered as *Churna* (powder).

According to *Acharya Sharangdhar churna* means, finely powdered dry drugs which is filtered through a clean cloth. In other words, the fine powder obtained after thoroughly pounding and filtering the completely dry drugs is called *Churna.*

Aerosol[3,4]

The term aerosol is used to denote various systems ranging from those of a colloidal nature to systems consisting of pressurized packages. Aerosol may be defined as disperse phase system, in which liquid droplets or very fine solid particles get dispersed in the gas which acts as continuous phase. In other words aerosol is a pressurized dosage forms containing one or more therapeutic active ingredients which upon actuation emit a fine dispersion of solid/liquid materials in gaseous medium. Aerosol is also applied as a blanket term to any product in which a liquid or solid is discharged from a pressure resistant container using the pressure of a gas. As they are very functional, aerosols are widely used for cosmetics. Topical pharmaceutical aerosols can be formulated as a spray, foam, and semisolid. They can be used to deliver therapeutic agents topically (to the skin surface), rectally, and vaginally. They consist of a liquid, emulsion, or semisolid concentrate and liquefied gas or compressed gas propellant.

Anti-perspirants are often alcohol based. Alcohol initially stimulates sweating but may also temporarily kill bacteria. Anti-perspirant may contain perfume fragrances or natural essential oils intended to mask the odor of perspiration. Antiperspirants attempt to stop or significantly reduce perspiration and thus reduce the moist climate in which bacteria thrive[5].

Pharmaceutical Study

The formulations of *Shirishadi sharir daurgandhyahar yoga* "SSD Yoga" will be prepared as per the reference of "*Gada Nigraha*". SSD powder were prepared in the Departmental Pharmacy of Rasa shastra and SSD SPRAY were prepared in Associated Pharma Traders[6].

Pharmaceutical Preparation of SSD Powder[7,8]

Following steps were performed for pharmaceutical processes

- Collection of raw drugs of SSD powder.
- Removal of foreign matter.
- Powdering of each drug separately.
- Sieving of each drug separately.
- Mixing of each herbal drugs powder in equal quantity.
- Adding modern chemical.
- Mass mixing procedure.
- Adding perfume oil and preservative.
- Packaging and labeling.

Showing the Main Ingredients

S.No	Ingredients	Used Part	Raw drug weight (gm)	Weight after sieving (200 no. sieve) gm	Residue weight gm	Loss of weight in %	Powdered drug colour
1.	*Shirisha*	Stem bark	362	215gm	116.6	40.60	Dark reddish brown
2.	*Ushira*	Root	350	203	126.7	42	Greyish brown
3.	*Nagkesara*	Stigma	365	211	155	42.19	Coffee brown
4.	*Lodhra*	Stem bark	365	210	162	42.46	Dark Brown
5.	*Priyangu*	Fruit	350	220	118	37.14	Light brown
6.	*Aguru*	Heartwood	370	201	134	45.67	Black
7.	*Kutha*	Heartwood	380	219	138	42.36	Deep brown
8.	*Chandana*	Heartwood	350	200	140	42.85	Brown
9.	**Total**		**2892**	**1679**	**1090.3**	**41.94**	**Off white**

Showing the Modern Chemicals

S.No	Chemical	Quantity (gm)
1.	Calcium carbonate	600
2.	Zinc stereate	250
3.	Talc	3600
4.	Borex	60
5.	**Total**	**4510**

Observation

- Each drug shown their different color mentioned in table.
- The final color of SSD powder was off white.
- *Kutha* drugs gain moisture easily.
- When SSD powder was rubbed between index finger and thumb, its particles was present in grooves of finger.
- Percentage loss was to be higher in *Agaru* and minimum loss in *Priyangu*.

Result

- Total duration required for preparation of SSD powder – 10 days
- Used total herbal drug powder-1.6kg
- Modern chemical powder weight- 4.510kg
- Final weight obtained of SSD powder - 5.85kg
- Total loss of weight – 260gm
- Percentage of loss of weight – 4.25%

Precautions

- The drugs which are to be used in the preparation should be taken in cleaned and dried from
- Before using all the equipments were properly cleaned with water and dried
- Where are a number of ingredients are present, the best method is to powder, sieved, separately in order to avoid mixing up of the ingredients
- Some of the drugs contain more fibrous matter than others, than powdering and weighing them separately because different drugs have different types of consistency as *Mridu, Madhyam, Kathina.*
- Powdered plant material should be passed through suitable sieves to get the required particles of uniform size.
- When modern chemicals used in the formulation then should covered the mouth properly. Because it can cause irritation and trouble in breathing.
- Herbal drug powder and chemicals drug powder mixing separately
- Because of oxidation powdered drugs are stored in well closed containers reduces loss and moisture.
- The powder should be very fine and amorphous.
- Powders should be immediately packed air tight after powdering, as it may catch moisture.

Pharmaceutical Preparation of SSD Powder

Following steps were performed for pharmaceutical processes

1. Collection of raw materials
2. Drug extraction procedure (*Shirisha, Lodhra, Nagkesar*)
3. Drug essential oil procedure
4. Filtration of essential oil
5. Essential oil (*Priyangu, Kutha, Agaru, Chandana, Ushira)* and propylene glycol were added into IPA and drug extracts *(Shirisha, Lodhra, Nagkesara)* added in distilled water
6. All are filtered by filter paper
7. Solution filled in the aluminum container
8. Sealing the container
9. Added 40ml propellant (compressed gas propellant) and then cover up through the valve (continuous spray valve) and actuator (spray actuator) and cap the container
10. Packaging and Labeling

Ingredients of SSD Spray

S.No.	Ingredients	Quantity
1.	*Shirisha* extract	12.5gm
2.	*Lodhra* extract	12.5gm
3.	*Nagkesara* extract	12.5gm
4.	*Kutha* essential oil	12.5ml
5.	*Priyangu* essential oil	12.5ml
6.	*Agaru* essential oil	12.5ml
7.	*Ushira* essential oil	12.5ml
8.	*Chandana* essential oil	12.5ml
9.	Isopropyl alcohol	1250ml
10.	Propylene glycol	25ml
11.	Water	125ml
12.	Propellant	1000ml

Extraction of drugs (*Shirisha, Lodhra, Nagkesar*) [9,10]

Alcohol Soluble Extraction

- Sample of air dried drug was taken and powdered coarsely (powder whose all particles pass through sieve number 22 and not more than 10 percent pass through sieve number 44), in a 1 liter of closed flask. 50gm of coarsely powdered drug was kept with 90% of ethanol. In first 6 hours frequent shaking was done and the flask was allowed to stand for 18 hrs.
- Similarly three more, 1 liter of closed flask were taken and similar procedure was adopted. After 18 hrs on next day rapid filtration of the mixture present in all four flask with the help of filter paper.
- The filter was evaporated to dryness. In a paired flat bottomed shallow dish the filtrate was dried at 105°C to a constant weight in the hot air oven.
- Finally when constant weight was found the percentage of alcohol soluble extractive was calculated with reference to the air dried drug.
- The extract was separated and collected in a suitable container (air tight plastic pouch).

Water Soluble Extraction

Same process is used for water soluble extraction. But for extraction, solution was water (quantity is 20 times of drug) used.

S.No	Name	Weight of raw drug (gm)	Solution	Extraction value as per API (%)	Obtained extract (%)
1	*Shirisha*	199.52	Alcohol	Not less than 12	12.5271
2	*Lodhra*	241.18	Water	Not less than 15	16.4410
3	*Nagkesara*	202.25	Water	Not less than 12	12.47 31

Essential oil of drugs (*Kutha, Priyangu*): After isolation, filter the aqueous extract and essential oil isolated with the help of Clevenger apparatus.

For the extraction of essential oils from *Kutha* and *Priyangu* by hydro distillation under optimal operating conditions, a quantity of the coarsely powdered drugs 100gm was added to 800ml of distilled water in a 2 liter distilling flask and one filter paper cut into small strips are also put in the distilling flask. The set was placed in a balloon heater attached to a refrigerator to ensure condensation of essential oils for 3 to 4 hours. At the end of the distillation, two phases were observed, an aqueous phase (aromatic water) and an organic phase (essential oil), less dense than water. At last the essential oil was collected in the flask, dried under anhydrous sodium sulphate.

Observation

- *Kutha* essential oil color was dark yellow with an extremely tenacious odor.
- *Priyangu* essential oil color was whitish yellow.
- The final mixture of SSD Spray color was dark brown.
- Fragrance of SSD spray was natural pleasant (aromatic).
- After the complete distillation process two phases were observed (essential oil and aqueous).

Result

- Total duration required for preparation of SSD Spray – 5 days.
- Final weight obtained of SSD Spray - 2.5 liter.

Precautions

During extraction

- Use the right plant part, season and place of collection for better extraction.
- Authentication of plant material should be done before performing extraction. Any foreign matter should be eliminated.
- Suitable weight corrections should be introduced if a crude medication with high moisture content is to be utilized for extraction.
- The drying conditions for plant material are mostly determined by the chemical composition of its elements.
- For thermo stable constituents, Soxhlet extraction (if non-aqueous solvents are used).
- In case of hot extraction, higher than required temperature should be avoided. Continuous exposure to higher temperatures may cause certain glycosides to break.
- Standardization of the extraction time is important, because insufficient time results in incomplete extraction, and if the extraction period is prolonged, undesired compounds may be extracted as well.
- The active components' safety and stability should be ensured during the concentration and drying processes.

During Procedure

- Before using all the equipments were properly cleaned with water and dried.
- Extraction of each drug separately.
- Spray should not be applied any skin disorder (wound).
- Spray kept away from direct flame and heat.
- Be careful while filling of the spray in the container.
- IPA should not be kept open.

- Maintain the sufficient distance while filling propellant.

Analytical Study

Organoleptic Evaluation

Organoleptic evaluation of drugs refers to the evaluation of a drug by color, odor, appearance, taste, texture etc. In the present study two samples of SSD Powder and SSD Spray were analyzed by above mentioned parameters.

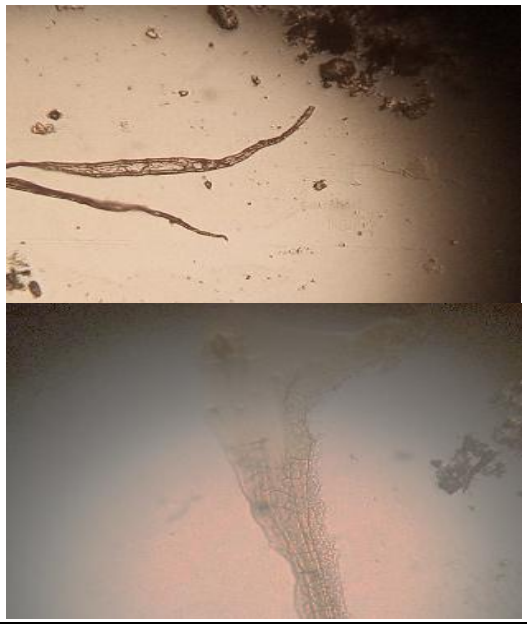
Sample	Color	Odor	Appearance
SSD Powder	Light brown	Characteristic	Fine powder
SSD Spray	Light brown	Aromatic	Liquid

SSD Powder Parameters

S. No.	Parameters	Unit	SSD Powder
1.	Loss on drying	%w/w	1.62
2.	Total Ash	%w/w	59.15
3.	Acid Insoluble Ash	%w/w	26.68
4.	Water Soluble Extractive	%w/w	8.59
5.	Alcohol Soluble Extractive	%w/w	2.31
6.	Bulk Density	g/ml	0.4848
7.	Tap Density	g/ml	0.6060
8.	TLC (Toluene: Ethyl Acetate: Formic acid 40: 6.0 : 0.2)	-	RF Value 366nm- 0.91 254nm- 0.83, 0.91 White light- 0.83, 0.91
9.	Particle Size	%w/w	100.00
10.	Powder microscopy	-	Data attached
	Metal analysis Magnesium Silica Chloride Carbonate Aluminum	 mg/kg mg/kg mg/kg mg/kg mg/kg	 1050.00 15.30 42.47 87.62 276.00

Powder Microscopy

S. No.	Staining dye	Image	Character
1.	Safranine		Lignified trichomes and lignified parenchyma

2.	Methylene blue		Parenchyma cluster
3.	Ferric chloride		Parenchymato-us cells, Polyphenol containing cells and trichomes
4.	Eosine		Cell cluster and Lignified trichomes

SSD Spray Parameters

In present study SSD Spray was prepared as per the modern concept. At first, isolation of *Shirisha* extraction by alcohol soluble extraction method and *Lodhra* and *Nagkesara* extraction

S.No.	Parameters	Unit	SSD Spray
1.	pH Value	-	5.86
2.	Volatile matter	%w/w	99.44
3.	Specific gravity	-	0.8955
4.	Clarity test	-	Clear
5.	TLC (Toluene: Ethyl Acetate 8.0 : 2.0)	-	RF Value 254nm-0.64, 0.79, 0.87
6.	**Heavy Metal Analysis** Lead (Pb) Mercury (Hg)	 mg/kg mg/kg	 0.55 BLQ (LOQ 0.1)
7.	**Microbiological Analysis** Total Fungal Count Total Bacterial Count	 cfu/ml cfu/ml	 <10 <10

Flow Chart only for Procedure

Sample Preparation

Dilution method 1

Take sample 10 g or 10ml

↓

Makeup to 100 ml with buffered sodium chloride-peptone solution pH 7.0

↓

As per requirement, polysorbate 80 (Tween 80) may be added to dissolve water immiscible substances

Dilution Method 2

Take 10ml from dilution method-1 make upto 100ml with buffered sodium chloride-peptone solution pH 7.0

Preparation of Media

Take de-pyrogenated glass wares and utensil by oven at 250°C for 60 min

↓

Weigh media and dissolve in distill water, shake well and heat to complete dissolve

↓

Check the water level of autoclave if require than adjust

↓

Load all prepared media in autoclave wait for temp. of 121°C hold 15 min

↓

Before testing switch on the U.V light of LAF, Pass Box & LAF room for 30 mins

↓

Open the lid of autoclave takes all the media on SS trays and sent to pass Box

↓

Enter in air lock and then secondary change room

Sterilize hands & work bench with IPA 70%

Procedure for Total Fungal Count

Take 1 ml of pretreatment sample (From dilution method-1) on at least 2 petri plates through pipette

↓

Pour 15-20ml of Sabourad Dextrose Agar Media on both plates

↓

Pour one other plate without sample for negative control or blank

↓

Close the lid of Petri dishes rotate clock wise & anti clock wise
for dispersion of sample in media and allow to stand for solidify

↓

Incubate the both plates in a suitable incubator for 5 days at 20°C to 25°C

↓

During Incubation period observe and count day to day colony in both plates

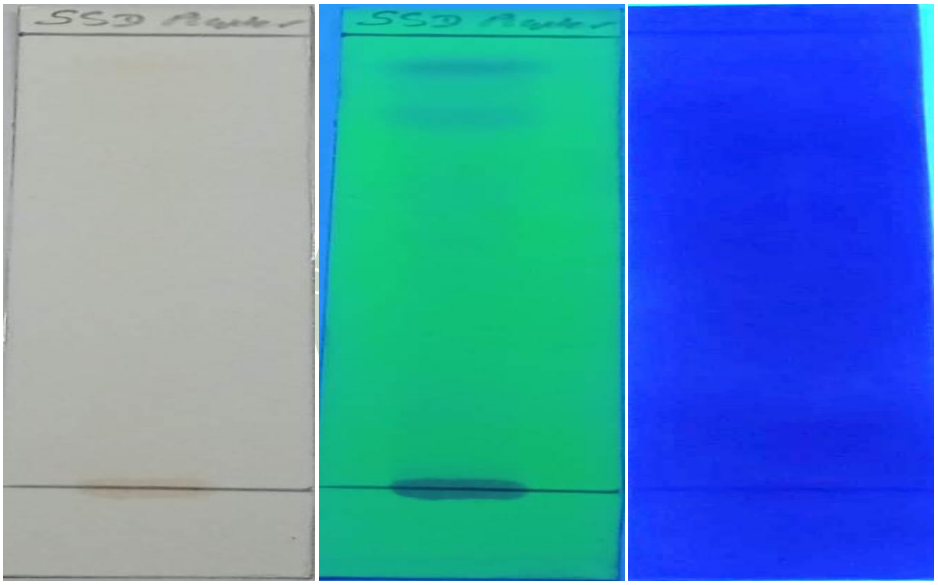
↓

After completion, count the colony of both plate and
mention average no. of colony in calculation

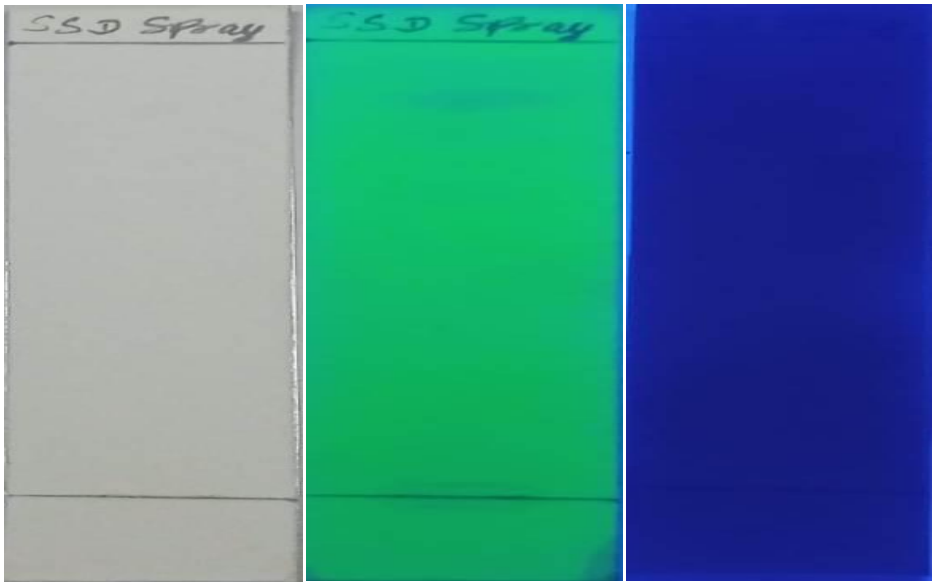
↓

If colonies observed more than 100 per plate than use dilution method-2

TLC Slide of SSD YOGA



SSD Powder Visible light SSD Powder- 254nm SD Powder- 366nm



SSD Spray Visible light SSD Spray- 254nm SSD Spray- 366nm

DISCUSSION

Pharmaceutical study involved two formulation i.e., SSD powder and SSD spray were formulated according to modern concept and prepared as per the active ingredients *(Shirisha, Ushira, Lodhra, Kutha, Nagkesara, Priyangu, Agaru, Shwet Chandana)* taken from classical reference. By this way a standardized process as well as standardized finished product can be obtained. This study SSD powder was prepared as per the modern concept. First of all in the preparation of SSD Powder each herbal drug was cleaned and weighed. All the drugs were pounded separately in *Ulukhal yantra* and they were powdered separately using the mixer grinder and sieved through 200 no. sieve (normal mesh aperture size 75mm) to provide an accurate determination of fine materials in the sample. After powdering the minimum percentage loss was seen in *Priyangu* and maximum loss was seen in *Agaru*. *Agaru* is a very hard woody drug and even after grinding its very fine powder wasn't obtained and eventually large particles were separated, while sieving causing increased residue volume, whereas *Priyangu* fruit were soft in nature and dry so it was easily reduced to fine powder. *Shirisha* drug contains a lot of fibers. After sieved the powder, all drugs had shown different color of powders.

S.No.	Drug Name	Color
1.	*Shirisha*	Dark reddish brown
2.	*Ushira*	Greyish Brown
3.	*Lodhra*	Greyish Brown
4.	*Nagkesara*	Brown
5.	*Kutha*	Deep brown or rusty
6.	*Agaru*	Dark blackish brown
7.	*Priyangu*	Light brown
8.	*Shwet chandana*	Light brown

During the sieving procedure, *Shirisha*, *Lodhra*, *Priyangu, Nagkesara, Agaru* and *Chandana* these drugs are easily sieved. But *Ushira* and *Kutha* both of these are hygroscopic in nature, so it retains moisture from environment. Sieving their powder *(Ushira* and *Kutha)* through sieve no 200 was completely difficult due to its moisture retaining property.

After the sieving process all drugs powder mixed very well. Mixing of powder depends on the particle characteristics, such as shape, density, particle size, and the amount of each component. After that the mixing of herbal drugs powder, chemical drug powder (Calcium carbonate, talc, zinc stearate, borax) mixed into herbal drug powder. Calcium carbonate act as absorbent, borex has anti bacterial property and talc act as lubricant. Then mixture of whole powder was mixed by mass mixer. After mixing powder added perfume oil and preservative (sodium benzoate 0.1%), to keep them safe from microbiological growth that are introduced inadvertently during or sub sequent to the manufacturing process.

SSD powder color was light brown due to the color of drugs powder and had characteristic odor. Finally the powder was packed and labeled. Obtained SSD Powder weight was 5.85kg and loss was 260gm (4.25%) during sieving and mixing etc.

Water soluble extraction method as per mentioned in API. Decoction method is not used for extraction because water is not a good solvent for many of the active ingredients in herbs, whereas the high efficiency and complete extraction is obtained by the Soxhlet method.

Isolation of essential oil of *Kutha* and *Priyangu* was conducted in Associated Pharma Lab and *Agaru, Chandana, Ushira* essential oil purchased from Shri Ram herbals, Jaipur. Clevenger apparatus used for the isolation of essential oil *(Kutha & Priyangu).* In the process of oil extraction the hot water and steam act as the main medium to extract bio active compounds from the plant matrix and carry them till the end. In comparison to other extraction methods, Clevenger apparatus is also known for extracting more oil quantity. For boiling, the organic material is combined with water in the round bottom flask at the bottom. The stem produced rises and is collected into a small burette. To extract the oils, one has to follow, boiling, condensing, and decantation. *Priyangu* essential oil color was whitish yellow and *Kutha* essential oil color was dark yellow with an extremely tenacious odor.

Take isopropyl alcohol and water as a solvent instead of methyl alcohol. Because IPA has antibacterial properties and it is a medium evaporating solvent, while methyl alcohol is a defeating agent and may cause skin to become cracked and dry.

All essential oil and propylene glycol added in to IPA, The liquid molecules play a role in dissolving. Because oil and alcohol molecules have similar enough polarities, they do not oppose each other enough to separate. Propylene glycol helps from the base for Anti-Perspirant. Drug extracts added into water. Then all solution were filtered by filter paper, because filter

paper works as a sieve, enabling tiny water molecules to pass through the paper, whilst holding back the much larger solid particles. Filled the solution in aluminum container, these container used for topical aerosol, less fragile, less incompatibility due to its seamless nature. After that container sealed with the help of pressure filling process, there is less propellant loss and moisture contamination is reduced and it is possible to obtain a high rate of production. After filling cover up the actuator, the actuator regulates the product spray's fineness as well as the volume of product that is dispensed. Final obtained weight of SSD spray was 2.5 liters, it was dark brown in color due to drug extract color and essential oil color.

The all analytical tests of SSD yoga showed that the appearance of SSD Powder is fine powder as a like Talcum powder and SSD Spray is liquid as a like Anti-Perspirant. Both formulations have a pleasant odor, due to the content (SSD Powder- Characteristic odor & SSD Spray- Aromatic odor). SSD Powder and SSD Spray color light brown due to the different ingredients added to them.

Loss on drying was 1.62% in the sample of SSD Powder which is indicative of moisture content. LOD is an important analytical test that plays a role in the quality control of drug. The pH of SSD Spray is 5.86, Anti-Perspirant has respectively acidic nature and within the range of pH of normal skin so that they don't cause any harmful effects or reactions. P^H is an important parameter that pays a role both in the efficacy of drug and quality control. Appropriate P^H enhances the drug absorption and distribution. Water soluble extractive (%w/w) was found 8.59 in SSD Powder sample as per the API limit. Alcohol soluble extractive (%w/w) was found 2.31 in SSD Spray. Extractive values are primarily useful for the determination of adulterated drugs, and determines the purity as well as quality of the drug. Ash values are helpful in the determining the quality of crude, especially in the powdered form. Ash value can be considered as a quantitative assessment of the soil and the inorganic content present in the sample. Total ash reflects the care taken in its preparation as all traces of organic matter are removed in ashing and usually consists of phosphates, carbonates, sodium, magnesium and calcium. The Ash value of SSD Powder is found to be 59.15 respectively. Acid insoluble ash indicates the presence of silicacious material present in the sample and the value of SSD Powder sample is 26.68 respectively.

Presence of heavy metals in herbal products is a serious concern today since it affects the safety of drug. WHO has prescribed the limits of heavy metal content in the herbal drug as follows- mercury- 1ppm, cadmium- 0.3ppm, arsenic- 3ppm, lead- 10ppm. Presence of heavy metal can occur either due to contamination from an external source during the processing of drug or can be from the plant part itself. The value of Lead is 0.55 and mercury is BLQ (LOQ 0.1) in the sample of SSD Spray. However in order to ensure that the test sample is free from heavy metal contamination. Analysis of mercury and lead were done which revealed that SSD Spray was free from heavy metal contamination.

Specific gravity is an important parameter of fluids being related to density. Knowing the specific gravity will allow determination of fluids characteristics compared to a standard, usually water, at a specified temperature. The specific gravity of a sample is expected to alter due to the presence of dissolved substances in the sample. The specific gravity of the prepared sample of SSD Spray was 0.8955 respectively.

The bulk density of a sample is the ratio of the mass to the volume of an untapped powder sample. Tap density of powders is an increased bulk density attained after mechanically tapping a cylinder containing the sample. Value of bulk density of SSD powder is 0.4848 and value of tap density is 0.6060

Volatile matters parameter which is a criterion to judge the identity, quality or purity of crude drug and drug content which is in volatile nature that indicates the potency of sample therapeutically. Value of volatile matter in SSD Spray sample is 99.44 respectively.

Microbiological assay of the SSD Spray has not shown any contamination with microbes and hence completely safe and have been prepared under GMP. The microbial count i.e. fungal as well as bacterial in SSD Spray formulation is within range as per Ayurvedic Pharmacoepia of India so that there will be no harmful effects on their applications.

Particle size is one of the factors that affect absorption and dissolution of a drug. A solid drug's particle size and surface area are inversely proportional. Smaller the drug particle greater will be the surface area available for chemical reaction and thus more will be the activity of drug. SSD Powder very fine powder was throughout 200 no. sieve.

Thin layer chromatography is a diagnostic tool for the identification of unknown compound in any sample for the confirmation of presence of known compounds in the drug. The RF value of spots differentiates the chemical composition of the samples. It provides quantitative information of the main constituents of the drug. In the present study solvent system was Toluene: Ethyl Acetate in the ratio 8.0 : 2.0 SSD Powder sample and Toluene: Ethyl Acetate: Formic acid 40:6.0:0.2 for SSD Spray for derivatization of TLC plate methanol was used. Samples were analyzed on different wave lengths 254nm and 366nm. For SSD Spray at UV light 254nm wavelength spots

were seen with RF Value- 0.64, 0.79, 0.87 respectively. For SSD Powder at UV light 254nm wavelength with RF Value 0.83, and 366nm wavelength- 0.91 and White light-0.83, 0.91 respectively

CONCLUSION

The pharmaceutical study of the present work carried out with SSD Powder and SSD Spray by preparing as per the reference in the light of modern technology. During the preparation the characteristics such as color, odor, appearance etc. were mentioned and the quantity and quality of the ingredients as for the formula were also mentioned. The total quantity of SSD Powder obtained was 5.85kg and loss was 260gm whereas SSD Spray was 2.5 liter. The Organoleptic and Physico-chemical studied of the SSD Powder and SSD Spray were studied under various parameters such as- color, odor, appearance, pH, extractive value, ash value, metal analysis, TLC, microbial count etc.

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