Int J Ayu Pharm Chem
ISSN 2350-0204
www.ijapc.com

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Quality Assessment of Polyherbal Formulation: Slimit capsule

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ABSTRACT

Herbal medicines are also known by ancient medicine. In herbal medicine mostly roots, stems, leaves, flowers or seeds plants are used. Herbal medicines are synthetic version of plant or natural products. Standardisation ensures uniformity to certain practices within industry. Slimit capsule is composed of selected herbs known for their role in fat metabolism. In our present study we have standardised the Slimit capsule using physicochemical parameters, heavy metal analysis, pesticide residue, stability study and Microbial analysis. Pre-formulation parameters like bulk density, tap density. Compressibility index, Hausner's ratio, and angle of repose shows acceptable result in flow properties and all other parameters were also within the Specified limits. All above parameters were under the AYUSH permissible limits. Our results gave an idea about its beneficial effect to fat metabolism.

Key Words: *Standardisation, Slimit Capsule, Fat Metabolism*

INTRODUCTION

Herbal drug is base of modern medicines. Many of Allopathic medicines are synthetic version of plant derived “natural product”. There are several parts of plants which is used as herbal medicine like root, stems, leaves; blossoms or seeds to improve health and prevent disease or treat illness. Standardization is a predominant technique for maintaining and surveying the quality and potency of the polyherbals formulation. As these are mixes of more than one drug to get the desired therapeutic effect.

Vital care “Slimit capsule” is composed of select herbs known for their role in fat metabolism. Garcinia is a popular herb that prevents to change loads of sugars to fat. Gugglu is reported to reduce cholesterol and triglycerides. Triphala and Trikatu help normalise digestion.

The first report on standardization of Slimit capsule (polyherbal formulation) comprises of variant proportion of herbs such as extract of Triphala (fruit), Garcinia combogia (Kokam seeds), Commiphora wightii,Suddha Gugglu gum, Picrorrhiza kurrooa (Katuka root), Plumbugo zeylanica (Chitrak root), Clerodendron phlomoides (Agnimantha root), Hordeum vulgare (Yava seed), Trikatu, Embelia ribes (Vidanga seed), powder of Ferula asafoetida (Hingu resin) and also use excipients. According to WHO(1996a and b 1992), standardization and quality control of

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herbals is the process involved in the physicochemical evaluation of crude drug covering aspects, such as selection and handling of crude material, safety, efficacy and stability assessment of finished product, documentation of safety and risk based on experience, provision of product information to consumer and product promotion.

It is the cardinal responsibility of the regulatory authorities to ensure that consumers get the medication, which guarantees purity, safety, potency and efficacy. The regulatory authorities rigidly follow various standards of quality prescribed for raw material and finished products in pharmacopoeias, formularies and manufacturing operation through statutory imposed good manufacturing practices. These procedures logically would apply to all types of medication whether included in modern system of medicine or one of the traditional systems.

Our present study for Slimit capsule shows that we have explained the Pre-formulation study, physicochemical, stability, heavy metal, pesticidal residue, stability study, microbiological analysis.

MATERIALSAND METHODS

Pre-formulation studies

Pre-formulation parameters such as bulk density, tap density, Compressibility index, Hausner's ratio, and angle of repose were determined for the prepared polyherbal granules and the best trial batch was taken for capsule filling and further studies[2,3].

Pre formulation parameters

Bulk density, tap density and Carr's index [4, 5]

A weighed quantity (15g) of pulverized material was taken in a 50ml measuring cylinder and the primary volume (vo) was recorded. The contents were trapped and the pulverized volumes after 50 tap (v50).

Fluff density = w/vo g/cc

Tapped density = w/v50 g/cc

Carr's index = Tapped density- Fluff density/ Tapped density * 100

Value for Carr's index gave an idea about the quality of material and their flowing property. Value below 15 points indicates good flowing property of material and above 20-30 points indicates poor flowing property of a material.

Angle of repose [6]

The funnel was set at a particular height as per the following dimensions1.5cm, 2.5cm and 3.5cmon a burette stand. A white paper was placed under the funnel on the table. The pulverized drug passed slowly through the funnel until it formed a pile. The radius of the pile was then noted.

Angle of repose of the crush material was calculated by using the formula:

$\tan\theta = h/r$

$\theta = \tan (h/r)$

Where, h = height of the pile, r = radius.

The Value for angle of repose 30°generally indicate a free flowing material and angle 40° suggest a poor flowing material.

Hausner's ratio[6]

The basic method is to measure the unsettled apparent volume, V0 and the final tap volume Vf of the powder tapping the material until no further

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volume changes occur. A Hausner's ratio was calculated as follows:

Hausner's ratio = V0 / Vf

The Hausner's ratio between 1.00 to 1.11 shows outstanding flow and value more than 1.60 shows very, very poor flow.

Standardization of polyherbal formulation

Capsule evaluation

A polyherbal capsule was evaluated for their standard weight, weight variation, moisture content, disintegration time, pH and microbial load and compared with Indian pharmacopoeial standards [7].

Average weight: Twenty capsules were individually weighed and the average weight of the capsule was calculated.

Weight variation: The individual weights of the each capsule should be within the limits of 90% and 110% of the average weight.

Moisture content: Moisture content was determined by using automatic Karl Fischer titration apparatus.

Disintegration time: Disintegration test was performed using the digital microprocessor based disintegration test apparatus. Capsule was introduced into each tube and a disc was added to each tube. An assembly was suspended in water in a 1000 ml beaker. The volume of water at its highest point was at least 25 mm below the surface of the water and at its lowest point was at least 25 mm above the bottom of the beaker. The apparatus was operated and maintained at a temperature of 37 ± 2ºC.

pH value: pH of 1% solution was determined by using a digital pH meter.

Dissolution

Dissolution is considered as a tool for predicting rate of absorption and bioavailability in some cases, replacing clinical studies to determine bioequivalence of drug. We added six capsules in the basket type dissolution equipment containing distilled water as a dissolution media. The speed was set on 50 rpm for 1 hour and the sample was drawn at every 10 minutes and the amount of dissolved active ingredient in the solution was calculated as percentage dissolved in 1 hour.

Stability

The Pharmaceutical products are usually studied for stability profile at accelerated temperature, humidity and also at different intensities of light. The studies were performed to determine the physical, chemical, and therapeutic changes occurring in the polyherbal capsule by extrinsic factors [8 9].

a) Temperature: The effect of temperature on the stability of polyherbal capsule was checked by keeping all the capsule at different temperatures i.e. ambient, 35^0C, 50^0C, 55^0C, 65^0C for 30 minutes, 1, 3, and 6 hours.

b) Humidity: The effect of humidity on the stability of capsule was checked by keeping the entire capsule at four different humidity percentage i.e. 30%, 50%, 70% and 90%.

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Table 1 Each hard gelatin capsule contains extract derived from

Plant name	Botanical name	Family	Part used	Contains
Triphala	Classical formulation	-	Fruit	400mg
Kokam	*Garcinia cambogia*	Gattiferae	Seed	400mg
S.Guggulu	*Commiphorawightii*	Barseraceae	Exudates	350mg
Kataka	*Picrorrhizakurrooa*	Scrophulariaceae	Rhizome	200mg
Chitrak	*Plumbugozeylanica*	Plumbuginaceae	Root	150mg
Agnimantha	*Clerodendronphlomoides*	Versenaceae	Root	150mg
Yava	*Hordeumvulgare*	Poaceae	Seed	150mg
Trikatu	Classical formulation	-	-	100mg
Vidang	*Embeliaribes*	Myrsinaceae	Seed	75mg
Hingu	*Feralaasafoetida*	Umbelliferae	Resin	25mg

Heavy Metal analysis [10]

Preparation of samples by acid digestion method: Accurately weighed 2g of each sample of Slimit capsule was taken in Kjeldahl flask. Acid mixture of HNO_3:$HClO_4$ (4:1) was added in the flask and heated continuously till the solution was colourless. The sample was then transferred to a 25ml volumetric flask and the volume was made-up with distilled water. The blank Reagent was synchronously prepared according to the above procedure. The standards of Lead (Pb), cadmium (Cd), arsenic (As) and mercury (Hg) were prepared as per the protocol in the manual and the calibration curve was developed for each of them. Detection: Then samples were analyzed for the presence of Pb, Cd, As and Hg using Atomic absorbance spectrophotometer (AAS) 6300 (by SHIMADZU).

Pesticide residues

To determine the pesticide residues, 2g of each sample was extracted in Soxhlet apparatus with 150ml hexane. The traces of water and oil were removed from hexane extract. After oil removal, this extract was concentrated on rotary evaporator under reduced pressure and this concentrated extract was transferred to clean-up column. The elute was collected carefully and made up to 5ml with hexane. Aliquots of above concentrate were injected into pre-calibrated GC machine equipped with 63Ni electron capture detector. Operation temperature was programmed at 195°C, 200°C, 220°C for column, injector, and detector, respectively. Purified nitrogen gas was used as carrier gas at flow rate of 60 ml/min. Limit of detection was 0.1 to 0.5 ppb for organochlorine pesticides analyzed. Periodically procedural blanks were used to check cross contamination. Recovery studies with purified samples indicated that

Overall recovery value exceeded 80%. Identification and quantification were accomplished using known amount of external standard procured from Sigma-Aldrich [11].

Microbial Analysis [12, 13]

a) Total Microbial count

Preparation of sample: Dissolve 10mg sample in 100ml solution of buffered sodium chloride peptone having pH 7.

Examination of sample: Total viable aerobic count in the sample was examined by using the plate count method by Digital colony counter.

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For bacteria: Petri dishes of 10cm diameter were used, mixture of 1ml of the pre-treated preparation and 15ml of liquefied casein soyabean digest agar was added in each of Petri dishes at not more than 45°C. Two Petri dishes for each sample were prepared using the same dilution and incubated at 30-40°C for 5 days. The numbers of colonies formed were calculated using the digital colony counter. Results were calculated using plate with the greatest no. of colonies but taking 300 colonies per plate as the maximum consistent with good evaluation.

For fungi: Procedure was same as described in the test of bacteria but sabouraud dextrose agar with antibiotic was used in place of soyabean digest agar and incubate the plates at 20-25°C for 5 days unless a more reliable count was obtained in shorter time. Results were calculated using the plates with not more than 100 colonies by using colony counter.

b) Test for Escherichia coli

Powdered sample in 10gm was taken and volume made up to 100ml with lactose broth. This mixture was incubated at 35-37°C for 4 hrs. Take 1 ml sample from 100ml MacConkey broth and incubated at 43-47°C for 24 hrs. Subculture was prepared and inoculated on MacConkey agar media, and incubated at 43-47°C for 24 hrs. Growth of red, generally nonmucoid colonies of Gram negative rods indicated the possible presence of *E. coli.*

c) Test for Salmonella typhimurium

Powdered sample in 10gm was taken and volume made up to 100ml with lactose broth. This mixture was incubated at 35-37°C for 4 hrs. A further 10ml of this sample was taken in 100ml of tetrathionate bile brilliant green broth and incubated at 42-43°C for 18-24 hrs. 1ml of sample was taken from it and plated on a xylose lysine deoxycholate agar media and incubated at 35-37°C for 24 hrs. Well developed, red with or without black centre colonies indicated the presence of *S.thyphi.*

d) Test for Pseudomonas aeruginosa

SCDB solution of 0.1ml was pipetted out and streaked onto Cetrimide agar plates to check out the presence of *Pseudomonas aeruginosa,* the plates were then inverted and incubated at 37°C for 18-24 hours and were then observed for fluorescence colonies under UV.

e) Test for Staphylococcus aureus

SCDB solution of 0.1ml was pipetted out and streaked onto Vogel-Johnson Agar Medium to check out the presence of *Staphylococcus aureus*. The plates were then inverted and incubated at 37°C for 18-24 hours and were then observed for typical black colonies surrounded by yellow zones if any.

RESULTS AND OBSERVATION

Table 1 Pre-formulation Parameters

S.No.	Parameters	Result
1	Bulk density	0.6
2	Tap density	0.7
3	Carr's index	18.4
4	Hausner's ratio	1.19
5	Angle of repose	13.95

Pre-formulation parameters like bulk density, tap density, Carr's index, Hausner's ratio and angle of repose were obtained for the laboratory granules. According to obtained results (table 1) all the

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parameters followed for pre-formulation study were within limits.

Table 2 Evaluation of in process Parameters

Parameters	Result
Flow property	Good
Uniformity of filling	Uniform
Uniformity of weight	Uniform

According to the standards, the flow property of the mixture to be filled in the capsule must be in good range and it was confirmed by the above parameters. Result showed flow properties were excellent and all parameters were within the specified limits. So, after above results (table 2) it was chosen for further studies.

Table 3 Organoleptic Characters of Capsules

Parameters	Observation
Description	Light Brown granule in red colour cap-white colour body
Color	Light Brown granule
Odour	Characteristic
Taste	Characteristic

Description of organoleptic characters include "light brown" coloured granules packed in "0" sizered-white capsules. It is having characteristic odour and taste (table 3).

Table 4 Evaluation of Capsules

Parameters	Observation
Average weight	Within limits
Weight variation	Within limits
Moisture content (LOD)	3.8%
Disintegration time	8 min 46 sec
pH (1%aqueous solution)	6.02 ±0.72

Result (n=3) are reported as Mean ± Standard deviation

Capsule evaluation parameters like average weight, weight variation, moisture content, disintegration time and pH were obtained for the capsule. The capsule showed average weight and weight variation is in within limits(table 4). Other parameters in capsule evaluation like moisture content, disintegration time and pH also in limit (table 4) as per Ayurvedic pharmacopeia of India.

Table 5 Stability test of polyherbal capsule at different temperature

Storage Condition	Testing Condition	Time Duration (hours)				Result
		½	1	3	6	
Ambient	30 ºC	-	-	-	-	No change
Warm (30-40 ºC)	35 ºC	-	-	-	-	No change
Accelerated	50 ºC	-	-	-	-	No change
Accelerated	55 ºC	-	-	+	+	Degradation after 3 hour
Accelerated	65 ºC	-	+	+	+	Degradation after 1 hour

(-) No change, **(+)** Degradation;

Results of stability test at different temperature showed that there is no change seen in Ambient, warm and Accelerated 50ºC at storage conditions (table 5). Degradation starts after 3 hours at 55ºC and 1 hour after at 65ºC.

Table 6 Stability of polyherbal capsule at different humidity with respect to different temperature

Temperature	30% Humidity	50% Humidity	70% Humidity	90% Humidity
30%	-	-	-	-
35%	-	-	-	-
55%	-	-	++	++
65%	-	-	+++	+++

(-) No change, **(+)** Degradation;

Results of stability test at different humidity with respect to different temperature showed that there

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is no change seen in 30 to 50% humidity in different temperatures(table 6). Degradation starts at 70% and 90% of humidity at high temperature.

Table 7 Heavy metals, Mycotoxins and pesticide residue analysis and microbiological parameters of Slimit capsule

Name of Test	Method of Test	Limit	Test result
Heavy metals			
Lead	A.P.I-1Vol.VIII (ICP-MS)	10 PPM	NIL
Cadmium	A.P.I,-1Vol.VIII(ICP-MS)	0.3PPM	BLQ(LOQ0.1)
Arsenic	A.P.I,-1.Vol.VIII(ICP-MS)	3.0PPM	Less than 1.0 ppm
Mercury	A.P.I,1Vol.VIII(ICP-MS)	1.0PPM	Less than 1.0 ppm
Mycotoxins			
Aflatoxin B1	CEGTH/STP/C/011based on AOAC 999.07	5.0 (max)	BLQ(LOQ 2.5)
Aflatoxin B1+B2+G1+G2	CEGTH/STP/C/011based on AOAC999.07	10.0 (max)	BLQ(LOQ 8.0)
Pesticide residue			
Aldrin	AOAC 2007.01/QuEChERS Method GC/LC-MS/MS	0.05 (max)	BLQ (LOQ 0.01)
Dieldrin	As Mentioned Above	0.05 (max)	BLQ (LOQ 0.01)
Lindane	As Mentioned Above	0.6 (max)	BLQ (LOQ 0.01)
Bromopropylate	As Mentioned Above	3.0 (max)	BLQ (LOQ 0.01)
Deltamethrin	As Mentioned Above	0.5 (max)	BLQ (LOQ 0.01)
2,4-DDT	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
4,4-DDT	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
2,4-DDE	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
4,4-DDE	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
2,4-DDD	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
4,4-DDD	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
Endrin	As Mentioned Above	0.05 (max)	BLQ (LOQ 0.01)
Hexachlorobenzene	As Mentioned Above	0.1 (max)	BLQ (LOQ 0.01)
Hexachlorobenzene isomer	As Mentioned Above	0.3(max)	BLQ (LOQ 0.01)
Alachlor	As Mentioned Above	0.02 (max)	BLQ (LOQ 0.01)
Cis-Chlordane	As Mentioned Above	0.05 (max)	BLQ (LOQ 0.01)
Trans-Chlordane	As Mentioned Above	0.05 (max)	BLQ (LOQ 0.01)
Alpha Endosulfan	As Mentioned Above	3.0 (max)	BLQ (LOQ 0.01)
Beta Endosulfan	As Mentioned Above	3.0 (max)	BLQ (LOQ 0.01)
Endosulan sulphate	As Mentioned Above	3.0 (max)	BLQ (LOQ 0.01)
Heptachlor	As Mentioned Above	0.05 (max)	BLQ (LOQ 0.01)
Cypermethrin	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
Ethion	As Mentioned Above	2.0 (max)	BLQ (LOQ 0.01)
Dichlorvos	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
Malathion	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
Methidathion	As Mentioned Above	0.2 (max)	BLQ (LOQ 0.01)
Fenitrothion	As Mentioned Above	0.5 (max)	BLQ (LOQ 0.01)
Parathion	As Mentioned Above	0.5 (max)	BLQ (LOQ 0.01)
Parathion Methyl	As Mentioned Above	0.2 (max)	BLQ (LOQ 0.01)
Phosalone	As Mentioned Above	0.1 (max)	BLQ (LOQ 0.01)
Piperonyl butoxide	As Mentioned Above	3.0 (max)	BLQ (LOQ 0.01)
Pirimiphos methyl	As Mentioned Above	4.0 (max)	BLQ (LOQ 0.01)
Chlorpyrifos	As Mentioned Above	0.2 (max)	BLQ (LOQ 0.01)
Chlorpyrifos methyl	As Mentioned Above	0.1 (max)	BLQ (LOQ 0.01)
Chlorfenvinphos	As Mentioned Above	0.5 (max)	BLQ (LOQ 0.01)
Azinphos methyl	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
Fonofos	As Mentioned Above	0.05 (max)	BLQ (LOQ 0.01)
Diazinon	As Mentioned Above	0.5 (max)	BLQ (LOQ 0.01)
Dithiocarbamates	As Mentioned Above	2.0 (max)	BLQ (LOQ 0.01)
Fenvalerate	As Mentioned Above	1.5 (max)	BLQ (LOQ 0.01)
Permethrin	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)

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Pyrethrins	As Mentioned Above	3.0 (max)	BLQ (LOQ 0.01)
Quintozene	As Mentioned Above	1.0 (max)	BLQ (LOQ 0.01)
Microbiological parameters			
Escherichia coli	API,PART-I,VOl.VIII,2008	Absent/g	ABSENT Per g
Staphylococcus aureus	API,PART-I,VOl.VIII,2008	Absent/g	ABSENT Per g
Pseudomonas aerugenosa	API,PART-I,VOl.VIII,2008	Absent/g	ABSENT Per g
Total Aerobic Microbialcount	API,PART-I,VOl.VIII,2008	NMT1000 CFU/G	8500 CFU/g
Total Yeast & Mould count	API,PART-I,VOl.VIII,2008	NMT1000CFU/G	<10 CFU/g
Salmonella Spp.	API,PART-I,VOl.VIII,2008	Absent/g	ABSENT Per g

Results indicated that concentration of Lead and Cadmium in capsule was not in detectable amount. Arsenic and Mercury was less than 1 ppm in the formulation. As per result heavy metal content in capsule was less than the prescribed limit. Concentration of mycotoxins and pesticide in capsule was not in detectable amount. All the pesticides are below limit of detection in the formulation. As per result (table 7) mycotoxins and pesticide content in capsule was less than the prescribed limit. In microbiological parameters total Microbial count was 8500CFU/gm in capsule. It was less than prescribed limit. *E.coli, Salmonella spp., Pseudomonas aerugenosa, Staphylococcus aureus* were not found in detectable amount in the formulation.

DISCUSSION

The Ayurvedic medicines are based on plants, animals and minerals origin which is available in both single ingredient and compound formulations, still, Ayurveda does not rule out any substance from being used as a potential source of medicine. Any drugs derived from traditional herbs may have possible therapeutic relevance in the treatment of illness[14]. In the present research work Triphala (Fruit), *Garcinia cambogia* (Seed), *Commiphora wightii* (Exudate), *Picrorrhiza kurrooa* (Root), *Plumbugo zeylanica* (Root), *Clerodendron phlomoides* (Root), *Hordeum vulgare* (Seed), Trikatu, *Embelia ribes* (Seed), *Ferula asafoetida* (Resin) were used for the polyherbal 500 mg capsule. Firstly it was formulated and then evaluated for its quality standard. This is very important irrespective of their medicinal content and therapeutic effect.

Pre-formulation parameters including angle of repose (a traditional characterization method for pharmaceutical powder flow), porosity (packing geometry), Carr's index and Hausner's ratio (a measure of the interparticulate friction) are useful tools in the development of new formulation. A value of <30° indicates 'excellent' flow whereas >56°indicates 'very poor' flow. Based on above given criteria, flow was rated as 'excellent'. The Carr's index and Hausner ratios were found to be18.4 and 1.19. Lower CI or lower Hausner ratios of a material indicates better flow properties than B higher ones. A Carr's index of <10 or HR of <1.11 is considered 'excellent' flow whereas CI>38 or HR>1.60 is considered 'very very poor' flow [15 16]. Based on the results obtained flow of

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selected plant powder was rated as 'good'. Good flow of powder helps to avoid unloading powders that will not flow out of storage containers. As well as help to achieve the best formulation and improve the quality and consistency of the product.

The stability studies of pharmaceutical formulation is help to ensuring the maintenance of product quality, safety and its efficacy throughout the shelf life and it is considered as prerequisite for the acceptance and approval of any pharmaceutical formulation. In present study stability test at different temperature and humidity showed that there is no change seen in storage condition and humidity however degradation seen in higher temperature and humidity.

All the ten drugs were approved as quality drug when undergone by phyto-pharmaceutical evaluation according to the pharmacopoeial standards. The disintegration time of polyherbal capsule is 8.46 minutes, which determined the release of a drug from solid dosage form which the substance dissolved in the fluid of gastrointestinal tract. In light of the phyto- pharmaceutical studies of the polyherbal capsule was found almost stable. Heavy metals interrupt metabolic functions in two ways: They accumulate and thereby disturb function of vital organs and glands such as the heart, brain, kidneys, bone, liver, etc. They displace the vital nutritional minerals from their original place which is responsible for nourishment of vital organs, thereby, hindering their biological function. As per result obtained in capsule was less than the prescribed limit or not in detectable amount. Mycotoxicosis is the term used for poisoning associated with exposures to mycotoxins. It has the potential for both the conditions acute and chronic health effects via several routes i.e. skin contact, ingestion, inhalation, and entering the blood stream and lymphatic system. mycotoxins a content in capsule was less than the prescribed limit.

Pesticide is mixture of substances used for killing pests: organisms dangerous to cultivated plants or to animals. The term applies to various pesticides such as insecticide, fungicide, herbicide and nematocide [17]. Applications of pesticides to crops and animals may leave residues in or on food when it is consumed, and those specified derivatives are considered to be of toxicological significance [18]. All the pesticides are below limit of detection in the formulation.

Microbiological testing parameters of capsule was less than prescribed limit in which *E. coli*, *Salmonella spp.*, *Pseudomonas aerugenosa*, *Staphylococcus aureus* were not found in detectable amount in the formulation. Further studies require more specific methods to explore the constituents responsible for the activity and the mechanism of action. This might prove significant and better therapies for the treatment and prevention of Obesity.

CONCLUSION

Our present study was carried out for standardization of Slimit capsule. The prepared formulation was screened for various standardization parameters as per Ayurvedic

pharmacopoeial standards. The research outcome of the standardization parameters can be used for evaluating the quality and purity of the formulations for the polyherbal formulation.

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