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A COMPARATIVE ANALYTICAL STUDY OF BRIHATAVASAVALE HA-1, BRIHATAVASAVALEHA-2 & BRIHATAVASAVALEHA-3

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ABSTRACT :

Rasashastra and Bhaishajya Kalpana is a part and pride of every branch of *Ayurveda. Vaidya* is the central one having the knowledge of disease, selection, collection and preparation of drugs, analytical study of drugs in the antiquity. Analytical study is determination of the values of different parameters used for the analysis of a sample. It is the marking line to note the limits or ranges of the values. Hence, it stands as a method of standardization of formulations. For standardization of finished product it is essential to analyse the prepared drug by employing various parameters and then to fix suitable standards, so that quality of the product can be established.There are three variations of *Brihatavasavaleha* with same name but different compositions are mentioned in *Bhaishajya Ratnavali* (*Rajyakshma Rogadhikaara)* chapter for same therapeutic use. Thus this work "A Comparative analytical study of *Brihatavasavaleha* 1,*Brihatavasavaleha* 2 & *Brihatavasavaleha*3," is planned to be analyzed using parameters as per the references available in protocol for testing Published by C.C.R.A.S.

Key words: *Brihatavasavaleha,*

INTRODUCTION: In *Ayurvedic* Classical texts there are five types of *Kalpanas* mentioned to prepare medicines – *Swarasa, Kalka, Kwatha, Hima & Phanta.Avaleha Kalpana* is an *Upakalpana* of *Kwatha kalpana. Avaleha* is a semisolid preparation of drugs which is easily administrated formulation in *Ayurveda* known for its important role in the management of various diseases. The word *Avaleha* has different synonyms like *leha, rasakriya* etc. The word *avaleha* has been originated from the *'LihAswadane'* here *"lih*" is *dhatu* which means licking a substance and *"aswadane*" is the *kriya* which shows good palatability of that substance. In this way these therapeutic form of medicine work in two ways i.e. as it is licked so provide local effect on oral fausaa, larynx, and throat region and after ingestion and assimilation it shows systemic effect. This is prepared with addition of jaggery, sugar candy and boiled with prescribed drug juice or decoction. *Aacharya Sharangadhar* mentioned that *rasakriya* as a synonym of *Avaleha*. The semi-solid material, which is obtained by boiling *kwatha* etc (i.e. *kwath, swarasa, hima, phanta* etc. is known as *Rasakriya. Brihatavasavaleha* is indicated for the treatment of *kshaya* (emaciation), *kasa* (cough*) and raktapitta* (bleeding disorders) in classical *Ayurvedic* texts.The formulations are *Brihatavasavaleha*[1]-1 (*BhaishajyaRatnavali Brihatavasavaleha*[2]-2 (*Bhaishajya Ratnavali*, & *Brihatavasavaleha*[3]-3 (*Bhaishajya Ratnavali*. As all of them are indicated with same name and for same therapeutic use but with different composition

MATERIAL AND METHODS:

1.Preparation of *Brihatavasavaleha*- 1

Bhaishajya Ratnavali have described *Brihatavasavaleha*-1 as-

Details of ingredients Used in *Brihatavasavaleha* 1:

Sl.No.	Drug	Quantity
1	*Vasa Panchang*	7.5 Kg
2	Water	19.5 Lit
3	Sugar	7.5 Kg

Details of *Prakshepa dravyas* Used in *Brihatavasavaleha*1:

Sl.No.	Drug	Quantity
1	*Shunthi* (Zingiberofficinale)	18 gm
2	*Pippali* (Piper longum)	18 gm
3	*Maricha* (Piper nigrum)	18 gm
4	*Twak* (Cinnamomumzeylanicum)	18 gm
5	*Katphala* (Myricaesculenta)	18 gm
6	*Taleeshapatra (*Abieswebbiana*)*	18 gm
7	*Kshudraela* (Elettariacardamum)	18 gm
8	*Kushtha* (Soussorealeppa)	18 gm
9	*Shwetajeeraka* (Cuminumcyminum)	18 gm
10	*Kampillak* (Mallotusphilippinensis,	18 gm
11	*Pippalimoola* (Piper longum)	18 gm
12	*Chavya* (Piper chaba)	18 gm
13	*Vanshalochana* (Bambusaarundinacea)	18 gm
14	*Katuki*(Picrorhizakurroa)	18 gm
15	*Gajapippali* (Piper chabahunter)	18 gm
16	*Nagarmotha* (Cyperusrotundus)	18 gm
17	*Dhanyak* (foeniculamvulgare)	18 gm
18	*Tejapatra* (Cinnamomnmzeylanicum)	18 gm
19	Honey	600 gm

VASA KWATH

Name – *Vasa Kwatha Nirmana*.

Ingredients – *Vasa Panchanga Yavkuta* - 7.5 Kg.

Water - 19.5 liter.

Equipments Used-

1) Heating device – Gas burner with LPG cylinders

2) Vessel – Aluminum – 80 lit. Capacity

3) Cotton cloth

4) Stainless Steel ladle

5) Thermometer

Procedure:

It was prepared from wet *Panchang* of Vasa initial weight was 7.5 kg. and water added 19.5 liters boiled on heating device (gas burner) in temperature of 100^0C. Final weight of *kwatha* was 4.8 liters in the duration of 2.50 hours. It was bitter in taste and dark brown in colour.

The details of preparation of *Vasa Kwatha* are showed in table.

Details of *Vasa Kwatha:*

Parameters	*Vasa Kwatha*
Vasa Panchanga Yavkuta	7.5 kg.
Water	19.5 lit.
Temp. observed	90 - 95^{0}C
Total yield (in liters)	4.8 lit.
Duration	2.50 hr.

Observations:

(1)*Vasa Panchanga Yavkuta* floats on water at starting.

(2) Continuous stirring is needed to prevent exhaustion of upper part of *Vasa Panchanga.*

(3) Colour – Dark brown

Taste – bitter

Smell – Typical smell of *Vasa*

Preparation of *Brihatavasavaleha*-1 from *Vasa Kwatha*

Equipments: -

(1)Heating device – Gas burner with LPG cylinders.

(2)Stainless Steel Vessel,

(3)S.S. Ladle etc.

Procedure: -

(1)Pour the freshly prepared *Vasa Kwatha* in Stainless Steel Vessel.

(2) Mix the Jaggery and mild heat is applied.

(3) Mild heat is applied till '*Pakalakshanas"* stage is arrived. Then heating was stopped.

(4) After cooling fine powder of *prakshepa dravyas* are added and mixed properly.

(5) Honey is added on the second day.

(6) Detailed description of the preparation is mentioned in tabular form.

Practical details of *Brihatavasavaleha*-1

Parameters	*Vrihatavasavaleha*-1
Vasa Kwatha	4.8 Lit.
Total duration Required.	3:55 hrs
Temp. observed	85 - 95°C
Temp. when *PrakshepaDravyas*areadded	68°c
Temp.when honey is added	36°c
Total yield	8.424 kg.

Observations:

1) After mixing of Jaggery in *Kwatha*, colour of the mixture becomes darker.

2) Typical smell of Jaggery appears during *Paka*.

3) All *Gudapaka Lakshana* were seen properly in the *Avaleha* preparation.

4) After cooling, mixture of decoction, jaggery and condiments became hard Even ladle was unable to move freely in it.

4) Honey was added when temperature of *avaleha* attains the room temperature (36^{0}C) and proper mixing convert it into semisolid form.

2. Preparation of *Brihatavasavaleha*– 2

Bhaishajya Ratnavali have described *Vrihatavasavaleha*-2 as-

Details of ingredients used in *Brihatavasavaleha* 2

Sl.No.	Drugs	Quantity
1	*BrihatiPanchang (*Solanumindicum*)*	8.750 kg.
2	*Vasa Panchang (*Adhatodavasica*)*	8.750 kg.

3	*BharangiPanchang (*Clerodendrumserratum*)*	8.750 kg.
4	Water	91 Lit.
5	Sugar	5.250 kg.
6	*Go-ghrita*	665 gm.
7	Honey	1330 gm.

Details of *Prakshepa dravya* used in *Brihatavasavaleha* 2:

Sl. No.	Drugs	Quantity
1	*AbhrakaBhasma*(Mica)	70 gm.
2	*PippliChoorna*(Piper longum*)*	70 gm.
3	*Kushtha*(saussurealeppa*),*	70 gm.
4	*Taleeshapatra*(Abieswebbiana*)*	70 gm.
5	*Maricha (*Piper nigrum*)*	70 gm.
6	*Tejapatra (*Cinnamomnmzeylanicum*)*	70 gm.
7	*Jatamansi*(Nordostachysajatamansi*)*	70 gm.
8	*Khas (*Vetiveriazizanioidis*)*	70 gm.
9	*Lavanga*(Syzygiamarometicum*)*	70 gm.
10	*Nagkesar*(Mesuaferrea*)*	70 gm.
11	*Twak*(Cinnamomumzeylanicum)	70 gm.
12	*Nagarmotha*(Cyperusrotundus)	70 gm.
13	*Sugandhabala*(Valerianawallichii*)*	70 gm.
14	*BharangiPanchang (*Clerodendrumserratum*)*	70 gm.
15.	*Vidanga*(Amblicaribes)	70 gm.

VASA KWATHA:

Name – (*Vasa + Brihati + Bharangi)KwathNirmana*.

Ingredients – (*Vasa + Brihati + Bharangi)Yavkuta* - 26.25 Kg.

Water - 91 liter.

Equipment Used-

1) Heating device – Gas burner with LPG cylinders.
2) Vessel – Aluminum – 150 lit. capacity
3) Cotton cloth.
4) Stainless Steel ladle
5) Thermometer

Procedure: -

It was prepared from wet *Panchang* of *Vasa Bharangi* and *Brihati* (initial weight was 26.250 kg and water added 91 liters boiled on heating device (gas burner) in temperature of 100^0C. Final weight of *kwatha* was 22.750 liters in the duration of 2.50 hours. It was bitter in taste and brown in colour.

The details of preparation of (*Vasa + Brihati + Bharangi)Kwatha* are showed in table.

Practical details Of *Vasa Kwatha:*

Parameters	***Vasa Kwatha***
(Vasa+Brihati+Bharangi) panchangayavakuta.	26.25 kg.
Water	91 lit.
Temp. – observed	95^0C
Total yield (in liters)	22.75 lit.
Duration	2:20 hr.

Observations:1) (*Vasa + Brihati + Bharangi)panchangayavakuta* floats on water at starting.

2) Continuous stirring is needed to prevent exhaustion of upper part of (*Vasa+Brihati+Bharangi)panchangayava kuta*.

3) Colour – Brown
Taste – Bitter
Smell – Typical smell of *Vasa.*

Preparation of *Vrihatavasavaleha*-2 from *Kwatha*

Equipments:

(1)Heating device – Gas burner with LPG cylinders.
(2) Stainless Steel Vessel,
(3)S.S. Ladle etc.

Procedure:

1)Pour the freshly prepared *Vasa Kwatha* in Stainless Steel Vessel.

2) Mix the Jaggery and mild heat is applied.

3) All *Gudapaka Lakshana* were seen properly in the *Avaleha* preparation

4) After cooling fine powder of *prakshepa dravyas* are added and mixed properly.

5) Than *Gogrita* is added.

6) Honey is added on the second day.

7) Detailed description of the preparation is mentioned in tabular form.

Practical details Of *Brihatavasavvaleha* 2

Parameters	**Brihat*avasavaleha*-2**
Vasa Kwatha	22.75 Lit.
Total duration Required.	3:55 hrs
Temp. observed	95°C
Temp. when *PrakshepDravyas*areadded	68°c
Temp.when honey is added	36°c
Total yield (in kg.)	8.155 kg.

Observations:

1) After mixing of Jaggery in *Kwatha*, colour of the mixture becomes darker.

2) Typical smell of Jaggery appears during *Paka*.

3.All *Gudapaka Lakshana* were seen properly in the *Vasa Avaleha* preparation.

4) After cooling, mixture of decoction Jaggery, *Ghrita* and condiments became hard even ladle was unable to move freely in it.

5) Honey was added when temperature of *avaleha* attains the room temperature (36^0C) and proper mixing convert it into semisolid form.

3.Preparation of *Brihatavasavaleha* 3

BhaishajyaRatnavali have described *Vrihatavasavaleha*-3 as-

Details of ingredients used in *Brihatavasavaleha* 3:

Sl.No.	**Drugs**	**Quantity**
1	*Vasa Panchang*	7.5 Kg.
2	Water	19.5 Lit.
3	Sugar	7.5 Kg.

Details of *Prakshepadravyas* used in*Brihatavasavaleha*-3:

Sl.No.	**Drugs**	**Quantity**
1	*Shunthi*(Zingiberofficinale)	37.5 gm.
2	*Pippali*(Piper longum)	37.5 gm.
3	*Maricha* (Piper nigrum)	37.5 gm.

4	*Tejapatra*(Cinnamomnmzeylanicum*)*	37.5 gm.
5	*Kshudraela*(Elettariacardamum*)*	37.5 gm.
6	*Twak*(Cinnamomumzeylanicum*)*	37.5 gm.
7	*Katphala*(Myricaesculenta)	37.5 gm.
8	*Nagarmotha (*Cyperusrotundus*)*	37.5 gm.
9	*Kushtha (*Soussorealeppa*)*	37.5 gm.
10	*Kampillak*(Mallotusphilippinensis*)*	37.5 gm.
11	*Shwetajeerak*(Cuminumcyminum)	37.5 gm.
12	*Pippalimoola*(Piperlongum)	37.5 gm.
13	*Chavya*(Piper chaba)	37.5 gm.
14	*Katuki*(Picrorhizakurroa*)*	37.5 gm.
15	*Taleeshapatra*(Abieswebbiana)	37.5 gm.
16	*Dhanyak*(foeniculamvulgare)	37.5 gm.
17	*Krishna jeerak* (Carumcarvi),	37.5 gm.
18	*Haritaki*(Terminaliachebula *)*	37.5 gm.
19	*Nishotha*(Operculinaterpethum)	37.5 gm.
20	Honey	600 gm.

VASA KWATHA:

Name – *Vasa Kwath Nirmana*.

Ingredients – *Vasa panchangaYavkuta* - 7.5 Kg.

Water = 19.5 liter.

Equipment Used-

1) Heating device – Gas burner with LPG cylinders.
2) 80 lit. Capacity aluminum vessel
3) Cotton cloth.
4) Stainless Steel ladle
5) Thermometer

Procedure:

It was prepared from wet *Panchang* of *Vasa* initial weight was 7.5 kg. and water added 19.5 liters boiled on heating device (gas burner) in temperature of 100^0C. Final weight of *kwatha* was 4.8 liters in the duration of 2.40 hours. It was bitter in taste and dark brown in colour.

The details of preparation of *VasaKwatha* are showed in table.

Practical details of *Vasa Kwatha:*

Parameters	***Vasa Kwatha***
Coarse powder of *Vasa*	7.5 kg.
Water	19.5 lit.
Temp. – observed	95 ^{0}C.
Total yield (in liters)	4.8 lit.
Duration	2:40 hr.

Observations:

1) *Vasa panchange* floats on water at starting.
2) Continuous stirring is needed to prevent exhaustion of upper part of *Vasa panchanga.*
3) Colour – Dark brown
   Taste – bitter
   Smell – Typical smell of *Vasa*

Preparation of *Brihatavaasavaleha– 3* from *Kwatha*

Equipments:

(1)Heating device – Gas burner with LPG cylinders.
(2)Stainless Steel Vessel,
(3)S.S. Ladle etc.

Procedure:

(1)Pour the freshly prepared *Vasa Kwatha* in Stainless Steel Vessel.

(2) Mix the Jaggery and mild heat is applied.

(3) Mild heat is applied till '*Pakalakshanas'* stage is arrived.Then heating was stopped.

(4) After cooling fine powder of *Prakshepa dravyas* are added and mixed properly.

(5) Honey is added on the second day.

(6) Detailed description of the preparation is mentioned in tabular form.

Practical details Of *Brihatavasavleha*-3

Parameters	**Brihat*avasavaleha*-3**
Vasa Kwatha	4.8 Lit.
Total duration Required.	3:15 hrs
Temp. observed	95°C
Temp. when *PrakshepDravyas*areadded	68°c
Temp. when honey is added	36°c
Total yield	8.812 kg.

Observations:

1) After mixing of Jaggery in *Kwatha*, colour of the mixture becomes darker.

2) Typical smell of Jaggery appears during *Paka*.

3) All *Gudapaka Lakshana* were seen properly in the *Avaleha* preparation.

4) After cooling, mixture of decoction, jiggery and condiments became hard Even ladle was unable to move freely in it.

5) Honey was added when temperature of *avaleha* attains the room temperature (36^0C) and proper mixing convert it into semisolid form.

Three samples of prepared medicine are to be analyzed using following parameters as per the references available in protocol for testing Published by C.C.R.A.S.

ANALYTICAL TEST FOR *BRIHATAVASAVALEH:*

***Ayurvedic* parameters:** According to *Shrangadhara*, well prepared *avaleha* should come up as thread like (if taken out in rod), sink in water, takes finger prints, roll shapes if rolled between fingers, give pleasant smell, possesses good color & taste[4]

MODERN PARAMETERS:

1) Organoleptic Characters- Colour, Odour, Taste, Appearance, Touch.

2) Determination of Total Ash[5]

3) Determination of Acid-insoluble Ash[6]

4) Determination of Water Soluble Ash[7]

5) Determination of Moisture Content (Loss on Drying)[8]

6) Determination of pH Values[9]

7) Preparation of sugar solution for testings[10]

8) Total sugars[11]

9) Reducing sugar[12]

10) Thin layer Chromatography (TLC)[13]

OBSERVATION &RESULT:

Table No. 1 showing Organoleptic Characters of all *Brihatavasavaleha*:

	***Brihatvasavaleha*-1**	***Brihatvasavaleha*-2**	***Brihatvasavaleha*-3**
Colour	Greenish dark brown	Greenish dark brown	Greenish dark brown
Odour	Sweetish	Sweetish	Sweetish
Taste	Sweetish and astringent	Sweetish and astringent	Sweetish and astringent

Appearance	Semi solid	Semi solid	Semi solid

Table No. 2 showing Physio-chemical parameters of all *Brihatavasavaleha*:

	***Brihata vasavaleha*- 1**	***Brihata vasavaleha*-2**	***Brihata vasavaleha*-3**
Total ash	6.80%	7.20%	4.20%
Water soluble ash	2.50%	2.65%	1.90%
Acid insoluble ash	1.45%	1.50%	1.25%
Moisture content	11.10%	5.50%	7.20%
Water soluble extract	16.90%	17.40%	18.20%
Alcohol soluble extract	7.88%	13.80%	8.70%
pH 10% (w/v)	6.83±0.10	6.24±0.10	6.06±.001
pH 20% (w/v)	6.84±0.10	6.14±0.10	6.03±0.01

Table No. 3 showing Quantitative Tests of all *Brihatavasavaleha*:

	***Brihatavasavaleha*-1**	***Brihatavasavaleha*-2**	***Brihatavasavaleha*-3**
Total Sugar	38.24%	20.83%	33.33%
Reducing Sugar	10.86%	4.35%	14.70%

Thin Layer Chromatography: Solvent System: Chloroform Methanol ::80:20

Spraying Agent: AnisaldehydeSulphuric Acid

Table No. 4 showing Thin Layer Chromatography of *Brihatavasavaleha*-1:

Before Spray-		
RF	**Visible Light**	**UV**
0.23	Pale yellow	Pale fluorescent blue
0.40	Pale creamish-yellow	Blue
0.54	Yellow	Pale fluorescent blue
0.69	Yellow	fluorescent blue
0.85	Pale greenish-yellow	Pale blue
After spray-		
RF	**Visible**	**UV**
0.23	Creamish-straw	Pale fluorescent blue
0.40	Pale yellow	Pale blue
0.54	Yellow	Fluorescent blue
0.69	Straw	Fluorescent bright blue
0.85	Pale creamish-brown	Blue

Table No. 5 showing Thin Layer Chromatography of *Brihatavasavaleha*-2:

Before Spray-		
RF	**Visible Light**	**UV**
0.23	Pale yellow	Pale fluorescent blue
0.40	Pale creamish-yellow	Blue
0.54	Pale yellow	Pale fluorescent blue
0.69	Yellow	fluorescent blue
0.85	Yellow	Pale blue
After spray-		

RF	Visible	UV
0.23	Creamish-straw	Pale fluorescent blue
0.40	Pale yellow	Pale blue
0.54	Yellow	Fluorescent blue
0.69	Straw	Fluorescent bright blue
0.85	Pale creamish-brown	Blue

Table No. 6 showing Thin Layer Chromatography of Brihatavasavaleha-3:

Before Spray-		
RF	**Visible Light**	**UV**
0.23	Pale yellow	Pale fluorescent blue
0.40	Pale yellow	Blue
0.54	Pale yellow	Pale fluorescent blue
0.69	Yellow	fluorescent blue
0.85	Pale greenish-yellow	Pale blue
After spray-		
RF	**Visible**	**UV**
0.23	Creamish-straw	Pale fluorescent blue
0.40	Pale yellow	Pale blue
0.54	Yellow	Fluorescent blue
0.69	Straw	Fluorescent bright blue
0.85	Pale creamish-brown	Blue

(With specified solvent system, the entire sample exhibited similar colour spots)

DISCUSSION:

Pharmaceutical Preparations:

(A) Preparation of *BrihatVasavaleha*-1-

Step 1 (*Vasa kwathanirmana*)- It was prepared from wet *Panchang* of Vasa initial weight was 7.5 kg. and water added 19.5 liters boiled on heating device (gas burner) in temperature of 100^0C. Final weight of *kwatha* was 4.8 liters in the duration of 2.50 hours. It was bitter in taste and dark brown in colour.

Step 2 (*Brihatvasavalehanirman*)-After addition of sugar (7.5 kg) in (*Vasa Kwatha*) and heat was applied till the *pakalakshanas* optained,The temperature observed throughout the *Paka* about to 100 ^{0}C.After some cooling the fine powder of *Prakshepa dravyas* (324 gm.) was sprinkled and mixed properly. After complete cooling the honey (600 gm.) was added and mixed the whole product uniformly. The final weight of product was 8.424 kg.

(B) Preparation of *BrihatVasavaleha*2-

Step 1 (*Vasa+Bharangi+Brihati) kwathanirmana* - It was prepared from wet *Panchang* of *Vasa Bharangi* and *Brihati* (initial weight was 26.250 kgand water added 91 liters boiled on heating device (gas burner) in temperature of 100^0C. Final weight of *kwatha* was 22.750 liters in the duration of 2.50 hours. It was bitter in taste and brown in colour.

Step 2 *(Brihatvasavalehanirman*)-After addition of sugar (5.250 kg) in (*Vasa+Bharangi+Brihati*) *kwatha* and heat was applied till the *pakalakshanas* obtained. The temperature observed throughout the *Paka* about to 100^0C.After some cooling the fine powder of *Prakshepa dravyas* (*kashthouashadh*i 910 gm) was sprinkled and mixed properly.

Then *Abhraka Bhasma* (70 gm.) was also sprinkled and Ghee (665 gm) was added. Then mixed the whole product uniformly again. After complete cooling the honey (1330 gm) was added and mixed the whole product uniformly again.The final weight of product was 8.155 kg.

(C) Preparation of *BrihatVasavaleha*3-

Step 1 (*Vasa kwathanirmana*)- It was prepared from wet *Panchang* of Vasa initial weight was 7.5 kg. and water added 19.5 liters boiled on heating device (gas burner) in temperature of 100^0C. Final weight of *kwatha* was 4.8 liters in the duration of 2.40 hours. It was bitter in taste and dark brown in colour.

Step 2 *(Brihatvasavalehanirman*)-After addition of sugar (7.5 kg) in (*Vasa Kwatha*) and heat was applied till the *pakalakshanas* optained,The temperature observed throughout the *Paka* about to 100 ^{0}C.After some cooling the fine powder of *Prakshepa dravyas* (712.5 gm) was sprinkled and mixed properly. After complete cooling the honey (600 gm) was added and mixed the whole product uniformly. The final weight of product was 8.412 kg.

Analytical Test: Pharmaceutical study reveals ash value,loss on drying , water soluble extract, alcohol soluble extract and ^{pH}at 10%, p^Hat 20%of *Brihatavasavaleha*-1 were 6.80 % (w/w),11.10%(w/w), 16.90%(w/w),7.88%(w/w),6.83±0.10,6.84 ±0.10respectively.

For *Brihatavasavaleha*-1 Total sugar was 38.24% (w/w) out of which reducing sugar was 10.86% w/w.

Pharmaceutical study reveals ash value,loss on drying , water soluble extract, alcohol soluble extract and ^{pH}at 10%, p^H at 20%of *Brihatavasavaleha*-2 were 7.20 % (w/w), 5.50%(w/w), 17.40% (w/w), 13.80% (w/w), 6.24±0.10, 6.14±0.10 respectively.

For *Brihatavasavaleha*-2 Total sugar was 20.83% (w/w) out of which reducing sugar was 4.35% w/w.

Pharmaceutical study reveals ash value, loss on drying , water soluble extract, alcohol soluble extract and ^{pH}at 10%, p^H at 20% of *Brihatavasavaleha*-3 were 4.20 % (w/w), 7.20%(w/w), 18.20% (w/w), 8.70% (w/w), 6.06±0.001, 6.03±0.01 respectively.

For *Brihatavasavaleha*-3 Total sugar was 33.33% (w/w) out of which reducing sugar was 14.70% w/w.

CONCLUSION: Water soluble extractive is more than alcohol soluble extractive in all three samples of *Brihatavasavaleha.*

Regarding *Avaleha* two points should be kept in consideration these are –

1. Mode of administration (licking).
2. High percentage of sugar in the medicament.

Both these factors facilitate the oral absorption. Due to its mode of administration it produces soothing effect in throat relieving local irritation. However the maximum portion of the drug material get digested and absorbed through stomach and intestine.

There is another opinion that all water soluble constituents are absorbed and spreads in the body easily along with the glucose component.

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