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# A PHARMACEUTICAL REVIEW ON KAKUBHADYA CHURNA – A UNIQUE FORMULATION IN THE MANAGEMENT OF

RAJAYAKSHAMA

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#### **ABSTRACT**

Ayurveda, the Upaveda of Artharvana deals with the holistic system of treatment. In Bhaishajya Kalpana, Churna, as an Upkalpana of Kalka is a concept which is highly accepted in Ayurveda offering a wide range of applicability. Kakubhadya Churna is one such herbal compound explained in Brihat-Nighantu Ratnakara under Kshaya-Karma Vipaka Adhyaya and is specifically indicated for Kshaya and Kasa Roga. Aims and Objectives: The primary aim is to prepare Kakubhadya Churna and review all its ingredients. Materials and **Methods:** The study involves preparation of individual *Churna* of all the herbal ingredients and finally the compound *Churna* preparation. **Result:** The preparation requires effective pounding and meticulous mixing to produce a fine homogenous *Churna*. **Discussion:** The review provides the knowledge about properties of each drug aiding in assessment of their potential mode of action. The study notes complexities faced due to varied hardness of drugs and challenges in size reduction. **Conclusion:** The study offers a comprehensive review on Kakubhadya Churna which could be adopted for use in respiratory ailments.

**KEYWORDS:** Kakubhadya Churna, Rajayakshama, Arjuna, Amalaki, Shunthi, Bala, Eranda Beeja, Ayurveda.

#### INTRODUCTION

Rasashastra is defined as the branch of Ayurveda which deals with study of Rasadi Dravyas whereas Bhaishajya Kalpana deals with the preparation of medicine.

The *Sthavara* based pharmaceutics consider *Panchavidha Kashaya*<sup>[1]</sup> *Kalpana* under the basic preparation that forms the outline for secondary formulations in the name of *Upkalpana*. *Churna*, as an *Upkalpana* of *Kalka*, is the concept which is highly accepted in *Ayurveda* prepared with a single drug or combination of different drugs by homogenous mixing offering a wide range of applicability.

Kakubhadya Churna is mentioned in Brihat-Nighantu Ratnakara under Kshaya-Karma Vipaka Adhyaya and is specifically indicated for Kshaya and Kasa Roga. <sup>[2]</sup> The drugs have Kshayaghna, Jwaraghna, Shwasaghna, Kasaghna, Sangrahi, Stambhana, Deepana, Daha-Prashamana, Vedana-Shamana action and also have Rasayana effect.

Tuberculosis is a major health problem in the entire world. It is an infectious disease caused by *Mycobacterium tuberculosis*. Periodical development of drug-resistant traits in *Mycobacterium tuberculosis* has posed newer challenges in the treatment of the disease condition. Owing to the similarities in symptoms and chronicity of *Rajayakshama* and Tuberculosis, this study is intended to prepare *Kakubhadya Churna* and to assess its probable symptomatic therapeutic effect in the disease condition.

### AIMS AND OBECTIVES

The study deals with the preparation of *Kakubhadya Churna*, a poly-herbal formulation with a potential therapeutic action in *Rajayakshama* and other respiratory ailments and assessment of properties of its ingredients.

### MATERIALS AND METHODS

• Raw Drugs for the preparation were obtained from Sri Dharmasthala Manjunatheshwara Ayurveda Pharmacy Udupi.

- The Preparation of *Kakubhadya Churna* was carried out in *Rasashastra* and *Bhaishajya Kalpana* Pharmaceutical Study Lab, Sri Dharmasthala Manjunatheshwara College of Ayurveda, Hospital and Research Centre, Udupi.
- Preparation of Pre-formulation
- 1. Arjun Twak Churna
- 2. Bala Churna
- 3. Amalaki Churna
- 4. Eranda Beeja Churna
- 5. Shunthi Churna
- Preparation of Kakubhadya Churna

Table 1: Ingredients of Kakubhadya Churna.

Drug name	<b>Botanical name</b>	Family name	Part used	Ratio <sup>[4]</sup>
Kakubha	Terminalia arjuna	Combrataceae	Twak	1 part
Bala	Sida cordifolia	Malvaceae	Moola	1 part
Amalaki	Emblica officinalis	Euphorbiaceae	Phala	1 part
Shunthi	Zingiber officinale	Zingiberaceae	Kanda	1 part
Eranda	Ricinus communis	Euphorbiaceae	Beeja	1 part

### **DRUG REVIEW**

ARJUNA: Terminalia arjuna

SYNONYMS<sup>[5]</sup>

Arjuna – Useful as Hridya.

*Kakubha* – The tree has spreading branches or the stem bark is whitish or because of its *Kashaya Rasa* which does *Dhatu Shoshana*.

*Nadisarjah* – Grows in vicinity of streams.

*Indradruh* – Having powerful properties.

*Veeravruksha* – A potent drug.

Shwetavaah – It has whitish outer bark.

Shwasaneshwara - Relieves Dyspnoea.

### **CLASSIFICATION**

Charaka Samhita: Kashayaskanda, Udardaprashamana. <sup>[5]</sup> Sushruta Samhita: Nyagrodhadi gana, Salasaradi gana. <sup>[5]</sup>

Bhavaprakasha: Vatadi Varga. [6]

### RASAPANCHAKA<sup>[5]</sup>

Rasa : Kashaya

Guna: Ruksha, Laghu

Vipaka: Katu

Veerya: Sheeta

Prabhava: Hridya

### Doshakarma: Kaphapittashamaka<sup>[5]</sup>

Karma: Hridya, Kaphaghna, Kshayaghna, Raktavikarahara, Balya, Jwaraghna, Stambhana. [6]

### **ROGAGHNATA**

Hridroga, Raktapitta, Kasa, Shwasa, Asthibhagna, Kushta, Vrana. [6]

### BALA: Sida cordifolia

### SYNONYMS<sup>[7]</sup>

Bala – That which gives strength.

*Vatya* – Strong fibres.

Vatyalika – Occurs wildly.

*Kharyashtika* – Having hairy or rough stem.

Peetapushpi – Yellow flowers.

Bhadrodani – Seeds resemble cereals.

*Vinaya* – Promotes strength.

### **CLASSIFICATION**

Charaka Samhita: Brimhaniya, Balya, Prajasthapana. [7]

Sushruta Samhita: Vatasamshamana. [7]

Bhavaprakasha: Guduchyadi Varga. [8]

### RASAPANCHAKA<sup>[7]</sup>

Rasa: Madhura

Guna: Guru, Snigdha, Picchila

Vipaka: Madhura

Veerya: Sheeta

Doshakarma : Vatapittahara<sup>[7]</sup>

Karma: Balya, Brmhana, Rasayana, Vrushya, Prajasthapana, Sangrahi, Nadibalya, Raktapitta Shamaka, Jwarghna, Hridya. [8]

#### **ROGAGHNATA**

Rajayakshma, Kshaya, Raktapitta, Vrana, Pradara, Ardhanga Vata, Ardita, Manystambha, Vataroga, Updamsha, Phiranga Roga, Netrabhishyanda, Garbhinishula.<sup>[8]</sup>

### AMALAKI: Emblica officinalis

### SYNONYMS<sup>[9]</sup>

Amalaki – Having Amla Rasa in predominance or that which removes all the Mala from the body or that which pacifies all Doshas

Vayasya – Improves longevity

*Vrushya* – Improves virility or vitality

Shivam – Auspicious like Lord Shiva

Dhatriphala - Promotes Dhatus and protects from diseases just like a mother

Amrutaphala – A good Rasayana

### **CLASSIFICATION**

Charaka Samhita: Vayasthapana, Virechanopaga. [9]

Sushruta Samhita: Parushakadi gana, Triphala. [9]

Bhavaprakasha: Haritakyadi Varga. [10]

### RASAPANCHAKA<sup>[9]</sup>

Rasa : Amla Pradhana Lavanavarjita Shadrasa

Guna: Ruksha, Laghu

Vipaka: Madhura

Veerya: Sheeta

Doshakarma : Tridosha Shamaka<sup>[9]</sup>

Karma: Raktapittahara, Pramehaghna, Rasayana, Vrushya, Deepana, Yakruta Uttejaka, Dahaprashamana, Hridya, Chakshushya, Garbhasthapana, Medya. [10]

### ROGAGHNATA

Rasayana, Netra Roga, Amlapitta, Pandu, Kamala, Raktapitta, Hikka, Shwasa, Kasa, Khalitya, Vyanga, Vatrakta, Prameha.<sup>[10]</sup>

#### ERANDA: Ricinus communis

### SYNONYMS<sup>[11]</sup>

Panchangula, Gandharvahasta – Palmate leaves

*Vardhaman* – Rapid growing plant

*Deerdhadanda* – Long petiole

Vaataari – Pacifies vitiated Vata Dosha

Vyaghrapuccha – Inflorescence resembles Tiger's tail

Shulashatru – Relieves pain

Snehaprada – Yields oil

### **CLASSIFICATION**

Charaka Samhita: Bhedniya, Svedopaga, Angamardaprashamana, Madhuraskanda. [11]

 $Sushruta\ Samhita:\ Vidarigandhadi,\ Adhobhagahara,\ Vatashamsamana.^{[11]}$ 

Bhavaprakasha: Guduchyadi Varga. [12]

### RASAPANCHAKA<sup>[11]</sup>

Rasa : Madhura, Katu, Kashaya

Guna: Guru, Snigdha, Teekshna

Vipaka: Madhura

Veerya: Ushna

Doshakarma : Kaphavatahara<sup>[11]</sup>

Karma: Shulaghna, Shothaghna, Jwaraghna, Shwasaghna, Kasaghna, Adhobhagahara,

Vedanasthapana, Dahashamaka, Udararogahara, Shrishulahara. [12]

### **ROGAGHNATA**

Vata Roga, Amavata, Arshas, JwaraJanya Vibandha, Gudavikara, Sandhishotha, Netrarogal. [12]

### SHUNTHI: Zingiber officinale

## SYNONYMS<sup>[13]</sup>

Naagara – Shunthi is available in the cities commonly in the shops.

Shingavera – Horn shaped rhizomes.

*Katubhadram – Shunhti* is one of the best *Katu Dravyas*.

*Ushana* – Rhizome causes burning sensation.

*Mahaushadhi – Shunthi* is very efficacious drug because of its strong actions.

Vishwa – Quickly enters circulation because of its strong potency.

Vishwabheshaja – Because of its quality and easy availability.

#### **CLASSIFICATION**

Charaka Samhita: Triptighna, Arshoghna, Deepaniya, Shulaprashamana,

Sheetaprashamana, Trishna Nigrahana, Stanya Shodhana. [13]

Sushruta Samhita: Pippalyadi Gana, Trikatu. [13]

Bhavaprakasha: Haritakyadi Varga. [14]

### RASAPANCHAKA<sup>[13]</sup>

Rasa : Katu

Guna : Laghu, Snigdha

Vipaka: Madhura

Veerya: Ushna

Doshakarma : Vatakaphahara<sup>[13]</sup>

Karma: Deepana, Pachana, Vrishya, Swarya, Kasahara, Shwasahara, Shoolahara, Grahi,

Vibandhahara<sup>[14]</sup>

### **ROGAGHNATA**

Gulma, Udara, Kasa, Visha, Vatavyadhi, Galaganda, Shvitra, Grahani, Pandu, Atisara, Kustha, Ashmari, Jwara, Visha, Shopha, Sthaulya, Shwasa, Hikka, Yonivyapad, Shlipada, Pinasa, Prameha.<sup>[14]</sup>

### Preparation of pre-formulation

• Reference: *Sharangadhara*<sup>[15]</sup>

• Apparatus: *Tulayantra*, *Khalva yantra*, Pulverizer, Sieve

Method: Pounding, Grinding, Sifting

### 1. Arjuna Twak Churna

Ingredient: *Arjun Twak – 500 grams* 

### METHOD OF PREPARATION

- 500 grams of *Arjuna Twak* was weighed.
- Arjuna Twak was pounded in the Khalva Yantra into coarse powder.
- Coarse powder of *Arjun Twak* was grinded into fine powder.

• Sifting was done obtain fine powder of *Arjun Twak*.

### 2. Bala Churna

• Ingredient: Bala moola – 1500 grams

### METHOD OF PREPARATION

- 1500 grams of *Bala moola* was weighed.
- Bala moola was pounded in the Khalva Yantra into coarse powder.
- Bala moola coarse powder was grinded into fine powder.
- Sifting was done of obtain fine powder of *Bala moola*.

### 3. Eranda Beeja Churna

• Ingredient: Eranda Beeja – 500 grams

### METHOD OF PREPARATION

- 500 grams of *Eranda Beeja* was weighed.
- Eranda Beeja was pounded in the Khalva Yantra into coarse powder.
- Eranda Beeja coarse powder was grinded into fine powder.
- Equal quantity of *Eranda Beeja* and *Bala Moola Churna* was rubbed together.
- Sifting was done of obtain fine powder of *Eranda Beeja* along with *Bala Moola Churna*.

### 4. Amalaki Churna

• Ingredient: *Amalaki Phala* – 500 grams

### METHOD OF PREPARATION

- 500 grams of *Amalaki* was weighed.
- Amalaki in the Khalva Yantra was pounded into coarse powder.
- Amalaki coarse powder was grinded into fine powder.
- Sifting was done to obtain fine powder of *Amalaki*.

### 5. Shunthi Churna

• Ingredient: Shunthi Kanda – 500 grams

### METHOD OF PREPARATION

• 500 grams of *Shunthi* was weighed.

- *Shunthi* was pounded in the *Khalva Yantra* into coarse powder.
- Shunthi coarse powder was grinded into fine powder.
- Sifting was done to obtain fine powder of *Shunthi*.

### Preparation of Kakubhadya Churna

• Reference: Sharangadhara<sup>[10]</sup>

Method: Homogenous mixing, Sifting

Table 2: Quantity of ingredients in Kakubhadya Churna.

Se. No.	Ingredients	Quantity
1	Arjun Twak Churna	100 Grams
2	Bala Moola Churna	100 Grams
3	Eranda Beeja Churna	100 Grams
4	Amalaki Churna	100 Grams
5	Shunthi Churna	100 Grams

### **PROCEDURE**

- 100 grams each of all the ingredients were weighed.
- In a steel vessel the weighed ingredients were homogenously mixed using a spatula.
- The *Churna* was subjected to sifting.

#### RESULTS

### • Observation of Pre-formulation

1. Arjuna Twak Churna

No. of Days Taken – 1 day

*Arjun Twak* Taken – 500g

Churna obtained - 450g

Weight loss - 50 g

**Table 3: Observation of** *Arjun Twak Churna.* 

<b>Parameters</b>	Before	After
Appearance	Bark	Churna
Colour	Pinkish Brown	Pinkish Brown
Smell	Odourless	Odourless

### 2. Bala Moola Churna

No. of Days Taken – 1 day

Bala Moola Taken – 1500g

Churna obtained - 1000g

Weight loss – 500g

Table 4: Observation of Bala Moola Churna.

Parameters	Before	After
Appearance	Thin branches along with the roots	Churna
Colour	Greyish Black	Grey
Smell	Odourless	Odourless

### 3. Eranda Beeja Churna

No. of Days Taken -1 day

Eranda Beeja taken - 500g

Churna obtained – 400g

Weight loss – 100g

Table 5: Observation of Eranda Beeja Churna.

<b>Parameters</b>	Before	After
Appearance	Seed	Sticky Paste
Colour	Variegated seed	Greyish black paste
Smell	Odourless	Odour of Eranda Taila

### 4. Amalaki Churna

No. of Days Taken – 1 day

Amalaki taken - 500 g

Churna obtained - 450 g

Weight loss - 50 g

Table 6: Observation of Amalaki Churna.

Parameters	Before	After
Appearance	Dried fruit	Churna
Colour	Black	Greenish yellow
Smell	Amalaki smell	Amalaki smell

### 5. Shunthi Churna

No. of Days Taken -1 day

Shunthi taken – 500g

Churna obtained – 400g

Weight loss – 100g

Table 7: Observation of Shunthi Churna.

<b>Parameters</b>	Before	After
Appearance	Dried rhizome	Churna
Colour	Pale white	Yellowish
Smell	Strong Chunthi amall	Strong
Silien	Strong Shunthi smell	Shunthi smell

### 6. Bala Moola Churna and Eranda Beeja Churna

No. of Days Taken – 1 day

Eranda Beeja Kalka – 400g

Bala Moola Churna – 400g

Weight loss – 100g

Table 8: Observation of Bala Moola and Eranda Beeja Churna.

Parameters	Bala Moola Churna	Eranda Beeja Churna	Bala Moola and Eranda Beeja Churna
Appearance	Churna	Kalka	Churna
Colour	Grey	Greyish black	Grey
Smell	Odourless	Smell of	Slight smell of
Dilleli	Ododiioss	Eranda Taila	Eranda Taila

### • Observation of Formulation - Kakubhadya Churna

Arjuna Twak Churna Taken – 100 g

Bala Moola Churna Taken – 100 g

Eranda Beeja Churna Taken – 100 g

Amalaki Churna Taken - 100 g

Shunthi Churna Taken - 100 g

Kakubhadya Churna obtained - 500 g

Table 9: Observation of Kakubhadya Churna.

Parameters		
Appearance	Churna	
Colour	Grey	
Smell	Strong Shunthi aroma	



Figure 1: Arjuna Twak.



Figure 3: Dried Amlaki Phala.



Figure 5: Shunthi.



Figure 7: Eranda Beeja.



Figure 2: Arjuna Twak Churna.



Figure 4: Amalaki Churna.



Figure 6: Shunthi Churna.



Figure 8: Eranda Beeja and Bala Moola Churna.



Figure 9: Bala Moola.



Figure 10: Kakubhadya Churna.

### **DISCUSSION**

Churna, as an Upkalpana of Kalka, is the concept which is highly accepted in Ayurveda prepared with a single drug or combination of different drugs by homogenous mixing. It could be herbal or herbo-mineral containing Bhasma of metal and minerals offering a wide range of applicability such as its convenience in both External use (Pratisarana, Avadhulana, Lepana) and Internal use, as Anupana and as a pre-formulation in the preparation of Vati, Kashaya, Avaleha etc. The formulation is named after its first drug Kakubha and the term Kakubhadya signifies Kakubha and other drugs Bala, Amalaki, Eranda and Shunthi which are the ingredients of this Churna.

As Rajayakshama manifests due to involvement of *Tridosha* and *Vividha Kriya* is mentioned to provide symptomatic treatment based on *Dosha Pradhanyata* and *Roga Avastha*, the pharmacodynamics of *Kakubhadya Churna* can be understood with regard to the *Karma* of its ingredients.

Kakubha or Arjuna is best known as a Hridya Dravya. It is Kashaya Rasa Yukta with Laghu, Ruksha Guna and Sheeta Veerya. It is Kshayaghna, Raktavikarahara, Jwaraghna and acts as Kapha-Pitta Shamaka. It is indicated in Hridroga, Raktapitta, Kasa, Shwasa and Vrana. Luteolin, a type of flavonoid found in Arjuna has shown proven antibacterial activity against wide range of bacteria. Bala is Brihmaniyakara, Madhura Rasa Yukta, Guru, Snigdha, Picchila and has Sheeta Veerya. It is Balya, Rasayana, Vrushya, Prajasthapana, Sangrahi, Nadibalyaprada, Raktapitta Shamaka, Jwarghna, Hridya and is indicated in Rajayakshma, Kshaya, Raktapitta, Vrana, Pradara, Ardhanga Vata, Ardita, Manystambha, Vataroga, Updamsha, Phiranga Roga, Netrabhishyanda, Garbhinishula acting mainly upon Vata and Pitta Dosha. Methanolic extract of Bala Moola possess considerable antibacterial and

antifungal activities due to presence of high values of Anthraquinone and Tannins. [18] Amalaki is Amla Pradhana Lavanavarjita Shadrasa Yukta, Ruksha, Laghu and has Sheeta Veerya. It is Raktapittahara, Pramehaghna, Rasayana, Vrushya, Deepana, Yakruta Uttejaka, Dahaprashamana, Hridya, Chakshushya, Garbhasthapana, Medya. It is indicated in Netra Roga, Amlapitta, Pandu, Kamala, Raktapitta, Hikka, Shwasa, Kasa, Khalitya, Vyanga, Vatrakta, Prameha due to its Tridosha Shamaka action. Due to the presence of bioactive secondary metabolites and flavanoids like Tannins, Saponins, Cardiac Glycosides, Steroids and Phenols, *Amalaki* is a potent broad spectrum antimicrobial agent. [19] *Eranda* is *Madhura*. Katu, Kashaya Rasa Yukta, Guru, Snigdha, Teekshna and has Ushna Veerya mitigating vitiated Vata and Kapha Dosha. It is Shulaghna, Shothaghna, Jwaraghna, Shwasaghna, Kasaghna, Adhobhagahara, Vedanasthapana, Dahashamaka, Udararogahara, Shirashulahara and is indicated in Vata Roga, Amavata, Arshas, Jwarajanya Vibandha, Gudavikara, Sandhishotha, Netraroga. Lectin which is a protien present in Eranda Beeja is a strong antibiotic established through pharmacological research studies. [20] Shunthi is Katu Rasa Yukta, Laghu, Snigdha and has Ushna Veerya. It is extensively used for Shamana of Kapha and Vata Dosha. It is Deepaniya, Pachaniya, Vrishya, Swarya, Kasahara, Shwasahara, Shoolahara, Grahi, Vibandhahara and is indicated in Gulma, Udara, Kasa, Visha, Vatavyadhi, Galaganda, Shvitra, Grahani, Pandu, Atisara, Kustha, Ashmari, Jwara, Visha, Shopha, Sthaulya, Shwasa, Hikka, Yonivyapad, Shlipada, Pinasa, Prameha. Predominant Phenols like 6, 8 and 10 - Gingerol extracted from Ginger are identified as active inhibitors of *Mycobacterium* species in In-vitro studies. [40]

After analyzing the Guna and Karma of ingredients, it is found that the synergistic action of the formulation Kakubhadya Churna would help in relieving the signs and symptoms of Rajayakshama and even other respiratory infections from the point of view of contemporary science.

Atisara observed in Rajayakshama is a major condition which requires immediate management and Sangrahi Karma of Bala and Shunthi control the excessive Mala Pravrutti. Also, Shunthi and Eranda are responsible for Jatharagni Deepana and Ahara Pachana. Jihwashodhana Karma of Shunthi helps in enhancing interest towards the food intake thereby relieving Aruchi in the patient. Eranda has Dahashamana and Shulahara properties which attribute in the management of Amsa Santapa and Parshwa Shula. The Sheeta Veerya of Kakubha, Bala and Amalaki helps to bring down Jwara. Kantha Vishodhana Karma of Shunthi aids in the treatment of Kasa, Shwasa and Vaiswarya. Rakta Chardana or Hemoptysis which is evident in the disease condition is controlled by the Rakta Sangrahi Karma of Kakubha, Bala, Amalaki and Avami karma of Shunthi which controls the vomiting reflex.

Deepana, Daha-Prashamana, Vedana-Shamana Karma of drugs together mitigate the aggravated and vitiated *Tridosha*. The drugs are *Kshayaghna*, *Jwaraghna*, *Shwasaghna*, *Kasaghna*, *Sangrahi*, *Stambhana*, *Tridoshahara*. *Kakubhadya Churna* works as a *Rasayana* as it is *Hridya*, supports the *Pranavaha Srotas* while mitigating respiratory discomfort and strengthens the body by providing *Bala*.

### **CONCLUSION**

The transformation of raw ingredients into fine powder through size reduction and separation yielded a poly-herbal formulation therapeutically effective against varied symptoms of respiratory ailment. The review provides the in-detail information regarding the drugs which is of substantial significance in understanding the pharmacodynamics of *Kakubhadya Churna*.

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