

## **KSHEERPAKA KALPANA - NUTRACEUTICAL IN AYURVEDA**

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### **ABSTRACT**

Ayurvedic pharmaceutics deals with various methods of preparation of medicines. Basic preparations are five i.e. *Swarasa, Kalka, Kwath, Hima* and *Phanta*. With these basic methods other preparation are derived. *Ksheepaka kalpna* is derived from *Kwath Kalpana*. *Kwath* means decoction. Medicinal values are extracted in water with the help of *Agni*. *Ksherpaka kalpana* is a decoction in milk. In *Ksheerpaka kalpana Aushadhi dravya* is boiled with Milk and Water and medicinal values are extracted in Milk. These preparations are used as *Rasayana* because Milk is *Rasayan* , *Balya* . It is easily assimilated in the body.

Nutraceuticals are the preparations which are the foods with medicinal value. They are used to prevent the diseases or as an immunomodulator. Milk is a food and is a rich source of vitamins and minerals. Milk is an emulsion form, having capability to dissolve water soluble, fat soluble and protein soluble ingredients of the drugs. Milk is antacid, having more dietic value, palatable. In *Ksheerpaka kalpana* milk is heated with *aushadhi draavya* therefore medicinal benefits of these *dravyas* are conveyed via milk. Therefore *ksheerpaka kalpana* can be used as a medicinal food or Nutraceuticals.

**KEYWORDS:** *Ksheerpaka*, Milk decoction, *Rasayana*, Nutraceuticals

### **INTRODUCTION**

The term Nutraceuticals was coined from nutrition and pharmaceuticals in 1989 by Stephen De Felice. It can be defined as a food or a part of food that provides medical or health benefits, including the prevention or treatment of diseases<sup>1</sup>.

The Nutraceuticals normally contain the required amount of vitamins, lipids, proteins, carbohydrates, minerals or other necessary nutrients. For promotion of good health, Nutraceuticals are food product that provides health as well as medical benefits including the prevention and treatment of disease. Nutraceuticals may be used to improve health, prevent chronic diseases,

postpone the aging process and in turn increase life expectancy or support functions and integrity of the body. They are considered to be healthy sources for prevention of life threatening diseases such as Diabetes, cancer, Alzheimer disease or allergic conditions. Nutraceuticals are dietary supplement, medicinal food, functional food or pharmaceuticals.

*Ayurveda* can give the best solution to these Nutraceuticals. According to *Ayurveda Rasayana kalpa, Avaleha, khanda, prasha , panaka, ksheerpaka* and *pathya kalpana* etc preparations can be used as Nutraceuticals.

In *Ayurveda* concept of *Agnideepana* is important. Ayurvedic Nutraceuticals

increase *agni* i.e. digestive power and ultimately gives good *Rasadi dhatu* or increase *dhatu poshan*. The concept of *Ajasrik rasayana*<sup>2</sup> deals with food products that can be consumed daily from improving quality of life by offering protection from external and internal stress induced factors. Commonly used Nutraceuticals of Ayurveda include *Chyavanprash*<sup>3</sup> for general health and prevention of respiratory disorders.

*Brahma rasayana*<sup>4</sup> for protection from mental stress. *Phala ghruta*<sup>5</sup> for reproductive health. *Arjuna ksheerpaka*<sup>6</sup> for cardio protection. *Shatavari ghruta*<sup>7</sup> for general health of women. *Rasona kshirpaka*<sup>8</sup> for cardio protection and many more. Some examples of Ayurvedic *Bheshaja Kalpa* which can be used as Nutraceuticals are listed below.

**Table No. 1**

<b>BHESHAJA KALPANA</b>	<b>EXAMPLES</b>
<i>Swarasa</i>	<i>Tulsi</i> <sup>9</sup> , <i>Ardraka</i> <sup>10</sup>
<i>Ksheerpaka</i>	<i>Arjun</i> <sup>6</sup> , <i>Pippali</i> <sup>11</sup> , <i>Rason</i> <sup>8</sup>
<i>Churna</i>	<i>Rasayan churna</i> <sup>12</sup>
<i>Avaleha</i>	<i>Chyvanprash</i> <sup>3</sup> , <i>Kushmandavaleha</i> <sup>13</sup>
<i>Kalpa</i>	<i>Shatavari kalp</i> <sup>14</sup> (Proprietary Drug), <i>Brahmi kalpa</i> (Proprietary Drug)
<i>Khanda</i>	<i>Narikela khanda</i> <sup>15</sup>
<i>Panaka</i>	<i>chinch panak</i> <sup>16</sup>
<i>Mantha</i>	<i>Kharjuradi mantha</i> <sup>17</sup>
<i>Ghruta</i>	<i>Phala Ghruta</i> <sup>5</sup> , <i>Shatavari Ghruta</i> <sup>7</sup> , <i>Brahmi Ghruta</i> <sup>18</sup>
<i>Pathya kalpana</i> <sup>19</sup>	<i>Manda</i> , <i>Peya</i> , <i>Vilepi</i> , <i>Yavagu</i> , <i>Yusha</i> , <i>Krushara</i> , <i>Mamsarasa</i> , <i>Takra varga</i> etc.

### **KSHEERPAKA KALPANA**

*Ksheerpaka kalpana* is a unique preparation. It is derived from *Kwath Kalpana*. there are two references are found of *Ksheerpaka kalpana*, In *Sharangdhar Samhita*, it is mentioned that *Aushadhi dravya* 1 part, *Milk* 8 part and *Water* 32 part is to be taken and boiled till milk only remains<sup>20</sup>.

In *Dravyaguna Vidnyan* a *Acharya* says that *Aushadhi dravya* 1 part, *Milk* 15 part and *Water* is also 15 part is to be taken and boiled till milk only remains<sup>21</sup>.

**Table No.2 - References of Ksheerpaka Kalpana**

<b>Name of Text</b>	<b>Quantity Aushadhi Dravya: Milk:Water</b>
<i>Sharangdhar Samhita</i>	1:8:32
<i>Dravyaguna Vidnyan</i>	1:15:15

In these two references quantity of milk and water is different. In first method 8 part milk is taken and water is 32 parts, in the second method milk and water are same i.e. 15 parts. It is observed that in first method quantity of milk is less than in second

method and water is more in first method than in second method. Therefore concentration of aushadhi dravya is more in first method. Second method is may be more *soumya* means easy to digest and assimilated in the body.

Another reference is found in Ashtanga sangraha kalpa sthana. Here *kwath* is prepared and it is boiled with equal quantity of milk<sup>22</sup>. This procedure is found to be more effective. Because in concentration of dravyas is more and then it is heated with milk. So *Ksheerpaka* prepared in *kwath* is more concentrated as per text.

*Amla* (sour) and *lavan* (salty) *rasa* dravyas are not used to prepare *ksheerpaka kalpana* because these *rasas* can spoil the milk.

*Ksheerpaka kalpana* is used in *Shoola* and *Amajanit Vyadhi*. It removes *Ama*. The properties of *Ksheer* means milk are *Rasayana*, *Balya*, *Madhur* in *Rasa* and *Ajanma Satmya*. It is easily assimilated in the body. It can be taken by all age groups especially children and old age people. Children like milk therefore medicine with milk are easily taken. General dose of *Ksheerpaka* is 2 *Palas*.

Aushadhi dravyas which are *Ushna*, *Tikshna*, *Katu Rasatmaka*, their *Ksheerpaka kalpana* is useful as properties of milk are counteract these *doshas* of dravyas<sup>23</sup>. *Rasayana* property of milk is another

**Table No.-4- Nutritional values of milk<sup>29</sup> -**

Energy	60cal
Carbohydrate	5.26 gm
Sugar	5.26 gm
Lactose	5.26 gm
Fat	3.25gm
Protein	3.22gm
Vit A	28mu gm

advantage. So *Ksheerpaka kalpana* is very useful preparation which is used for the treatment of disease as well as to prevent the disease. It works as a nutraceutical.

Milk when heated it becomes *Guru* means heavy to digest but when it is mixed with water and heated it becomes *laghu* means easy to digest. Milk when boiled with ½ quantity of water it is *dosha nashak*, *laghu* and it is *balapushtikar*, *veeryavardhaka*<sup>24</sup>

Milk is an emulsion form<sup>25</sup>, having capability to dissolve water soluble, fat soluble and protein soluble ingredients of the drugs. It is antacid, having more dietic value, palatable. Reduce irritability, *ushna .tikshna* properties of the drugs.

#### Properties of Milk<sup>26</sup>

*Ksheer* means milk is a wholesome food of human. It is *aajanma satmya* has similar properties to *Oja*. It is *madhur madhur sheeta*, *guru*, *pichchil*, *snigdha*, *sara*, *mrudu*, *jeevaniya*, *shramahara*, *balya*, *rasayana*, *medhya*<sup>27</sup>.

**Table No.-3- Ingredients of milk as per modern texts<sup>28</sup> -**

Water	85.5-89.5
Total solid	10.5-14.5
Fat	2.5-6.0
Proteins-	2.9-5.0
Lactose	3.6-5.5
Minerals	0.6-0.9

Vit B12	0.44
Calcium	113mg
Magnesium	10mg
Potassium	143mg
Tryptophan	0.075gm
Lysine	0.140gm
Arginine	0.075gm
Glutamic acid	0.648gm
Glycine	0.075gm

Various dravyas are used to prepare Ksheerpaka kalpana. Commonly used are Pippali (*Piper longum*), Shunthi (*Zingiber Officinalis*), Arjun (*Terminalia Arjuna*), Rason (*Alium Sativum*), Haridra (*Curcuma*

*longa*), Shatavari (*Asparagus Resemosus*), Ashwagandha (*Withania Somnifera*)etc. In Ayurvedic texts various preparations are found. Some of these preparations are described in the following table.

**Table No.5- Medicinal properties of some of the Ksheerpakas is described in table**

Sr. No.	Name of the dravya	Properties	Therapeutic uses
1	Arjun <sup>6</sup> ( <i>Terminalia Arjuna</i> )	Astringent, cold, heal wounds	Obesity. Heart diseases. Urinary tract problem. ulcers, Cardio protective
2	Rason <sup>30</sup> ( <i>Alium Sativum</i> )	Tissue vitalizer, aphrodisiac, digestive, laxative, heals fractures, good for voice, promotes complexion, acts as a brain tonic, good for eyes	Chronic fever, heart disease, abdominal pain, constipation, intestinal growth, oedema, haemorrhoids, skin disease, worms, cough, dyspnoea, indigestion
3	Pippali <sup>11</sup> ( <i>Piper longum</i> )	Appetizer, aphrodisiac, sweet, after digestion, pungent, easy to digest, promotes vata and kapha, mild laxative	Cough, dyspnoea, abdominal disease, fever, skin diseases, intestinal growth, haemorrhoids, Arthritis, indigestion, spleen diseases,
4	Shunthi <sup>31</sup> ( <i>Zingiber Officinalis</i> )	Pungent, digestive, snigdha, improves voice	Vomiting, dyspnoea, spasmodic pain, cough, gastric and heart disease, oedema, haemorrhoids
5	Haridra <sup>32</sup> ( <i>Curcuma longa</i> )	Pungent, bitter, reduces kapha and pitta, enhances complex	Cough, skin disease, anaemia, wounds, ulcers, oedema, haemorrhoids, intestinal growth, fever, worms
6	Panchamuli <sup>33</sup>	Pungent, reduces kapha	Cough, dyspnoea, fever, pain in head, back, sinus and pleurisy

7	Trikantaka <sup>34</sup> ( <i>Tribulus Terestris</i> )	Reduces <i>kapha</i> and <i>vata</i>	Fever, diuretic
8	Kutaj <sup>35</sup> ( <i>Holarrhena dysenterica</i> )	Pungent, Astringent	Dysentery
9	Ashwagandha <sup>36</sup> ( <i>Withania Somnifera</i> )	Pungent, Aphrodisiac	Conception
10	Bilwadi-bilwa majja (Aegle marmelos) + aja dugdha <sup>37</sup>	Pungent, digestive	Dysentery
11	Vrushchiradi-shweta punarnava+ Bilwa+rakta punarnava <sup>38</sup>	Pungent, digestive	All types of Fever
12	Eranda moola <sup>39</sup> ( <i>Ricinus Communis</i> )	Bitter, digestive, laxative	Fever

## DISCUSSION

Ksheerpaka Kalpana is used in chronic diseases like Fever, Cough, Pleurisy, Heart diseases, Dysapnoea, Dysentery, Obesity, Skindiseases, Worms, wounds, ulcers, oedema, haemorrhoids, intestinal growth etc. and to improve immune system.

In *ksheerpaka* preparation medicinal herbs are boiled with milk and water. Medicinal plant extracts are dissolved in milk. Properties of milk and medicinal plant come together and work to treat the disease and also to prevent the disease Generally *Godudha* is used for the preparation of *ksheerpaka*. Some preparation are found in which *Aja dugdha* is used.<sup>40</sup> To prepare *Ksheerpaka* 1 part *Aushadhi dravya* is taken, 8 parts Milk is used and 32 parts water is used. The mixture is boiled till milk only remains. In the reference of *Ajadugdha*,

*Aushadhi dravya* means *Bilwa majja* is 2 *Tola*, *Aja dugdha* is 16 *Tola* and water is 64 *Tola* used and boiled till *Aja dugdha* only remains. Medicinal herbs contain various phytochemicals, alkaloids, Fatty acids, vitamins and minerals etc. Medical benefits of herbs could be conveyed via certain foods as carriers. Milk is one such carrier that has been effectively used to deliver phytochemicals for targeted health benefits. Interaction among the bio molecules of milk and bioactive compounds in herbs is occurred during the preparation of *Ksheerpaka kalpana* due to heat.

Antioxidant potential of some *ksheerpakas* reported higher antioxidant activity and phenolic content in milk decoction. Research has proved that food with phytochemicals may help to provide

protection from diseases. Antioxidants also helpful in avoiding chronic diseases<sup>41</sup>

Milk fat acts as a better carrier for the phytochemicals flavonoids and other fat soluble active constituents. The milk also provides a polar environment for the water soluble active constituents of herbs.

*Ksheerpaka* may be prescribed as a medicament. It has nourishing property and thus is expected to show immunomodulation. These benefits of *Ksheerpaka* makes it the preferred choice of drug delivery system in aged people and children who have low tolerance to various dosage forms and need added nourishment.

### CONCLUSION

*Ksheerpaka kalpana* is a unique preparation of ayurvedic pharmaceuticals. With the help of milk it is useful to promote the health as well as to treat the disease. Milk is a rich source of vitamins and minerals. It is *Ajanmasatmya*, easily taken by the children and old age group. Properties of milk and medicinal herbs which are used for the preparation of *ksheerpaka* work as a Nutraceuticals. In ayurveda concept of *Agnideepan* is important. Ayurvedic Nutraceuticals increase *agni* i.e. digestive power and ultimately gives good *Rasadi dhatu* or increase *dhatu poshan*. Due to processing of medicinal herbs with milk, *ksheerpaka kalpana* is useful Nutraceuticals of Ayurveda.

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