

Review Article

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ASPECTS RELATED TO THE MANUFACTURING PROCESS OF FORMULATIONS BASED ON *RASA SHASTRA* PRINCIPLES

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Abstract

Ayurveda concept of *Rasashastra* deals with the preparations and therapeutic utilization of *Rasa* drugs which mainly prepared from mineral, metal and precious elements, etc. These drugs prepared using various approaches including *Sodhana* and *Marana*, etc. These drugs due to the presence of vital elements offer several therapeutic benefits in many health ailments. The manufacturing process of such drugs involves several procedures such as; *Mardana*, *Murchana* and *Samkramana*, etc. These manufacturing processes not only eliminate toxicity of metal or minerals but also enhance therapeutic value of herbo-metallic formulations. It is very essential to follow correct manufacturing process while preparing *Rasa Dravyas*. It is stated that improper manufacturing process not only affect therapeutic value of *Rasa Dravyas* but also imparts toxic effects thus it is prerequisite to adopt and follow prescribed method to manufacture *Rasa* formulations. The purification of *Rasa Dravyas* is very important therefore this article discusses some key aspect related to the manufacturing process of *Rasa Dravyas*.

Key-Words: *Ayurveda, Rasa, Herbo-metallic, Sodhana*

Introduction

Ayurveda the Indian system encompasses several information related to the development of *Rasa Shastra* and these knowledge transformed from the ancient *Buddha* period. *Rasa shastra* is branch of ayurveda which mainly works around purification, preparation and therapeutic utilization of metals and minerals based formulations, it also utilizes gems for therapeutic purposes [1-4]. The preparation of such formulation involves various procedures like; *Mardana*, *Murchana*, *Jarana*, *Niyamana* and *Samkramana*, etc. Ayurveda under the theoretical principles of *Rasa Shastra* suggested that metals/minerals must be purified before using for human administration so that their non-compatible toxic or harmful properties converted to compatible forms to possessing many therapeutic benefits. The unique procedures involved in the preparation of *Rasa Shastra* enhances therapeutic values of such formulations therefore these drugs also utilizes in specific chronic disorders or rare diseases [3-5].

The substances which can be employed for therapeutic purposes under the principles of *Rasa Shastra* depicted in **Figure 1**.

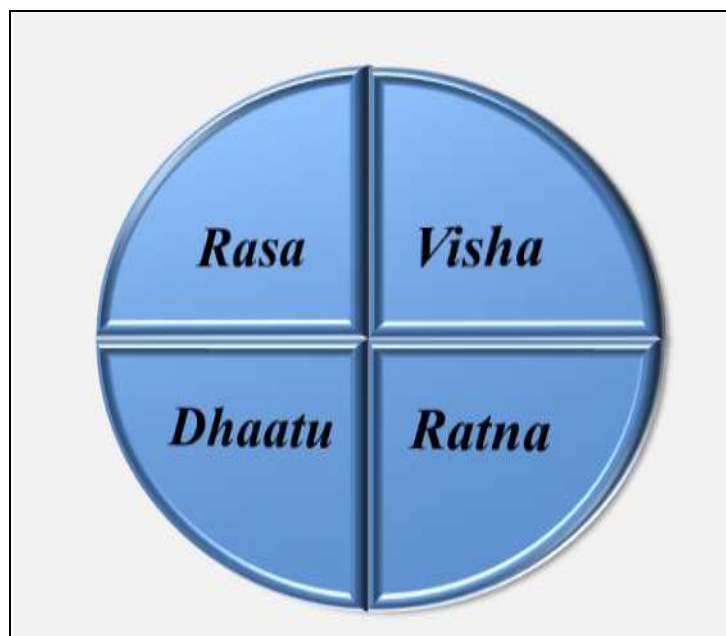


Figure 1: Substances utilizes under the therapeutic principles of *Rasa Shastra*

These substances when combined with herbs using specific procedures then give pharmacological responses to combat against many health ailments. As depicted in Figure 1 the every substances utilizes in *Rasa Shastra* offers specific health benefits i.e.; *Rasa* means mercurial preparations which imparts quick action, *Dhaatus* gives strength, *Ratna* maintain physiological integrity while *Visha* as *Prativisha* helps to combat against fatal effects of poisonous substances. The *Parada* as main component of *Rasa Shastra* helps to increase pharmacokinetic as well as pharmacodynamic properties of other medicines presents with *Parada* in *Rasa* formulation [5-7].

Aspects related to the Processing of *Rasa Dravyas*

- ✚ The processing of *Rasa Dravyas* convert them into purified form ready for human consumptions and procedure involved in processing of *Rasa Dravyas* should retain or enhance their therapeutic value.
- ✚ It is believed that the manufacturing processes improves onset of action of *Rasa Dravyas* and after processing these drugs assimilates easily.
- ✚ The methods involved in manufacturing of *Rasa Dravyas* convert them soft and palatable form so that can be used as medicine for therapeutic purposes.
- ✚ The *Shodana* process involves in manufacturing of *Rasa Dravyas* reduces toxicity of minerals/metals.
- ✚ The *Samskaras* of *Rasa Dravyas* helps to achieve optimum compositions of formulations which can get assimilated easily.
- ✚ The size reduction process involved in manufacturing of *Bhasma* helps to achieve finer particles of active components so that digestion and absorption of such formulations improved up to great extent.
- ✚ *Murchana* process involved in preparation of *Rasa* formulations improved therapeutic potency.

Specific *Rasa* Formulations and their Preparations:

Khalvi Rasa, *Parpati Rasa* and *Kupipakva Rasa* are some formulations prepared by mixing mercury and sulphur along with other ingredients. The homogeneous black coloured powder of mercury and sulphur is *Kajjali*, procedure involved here reduces size and improve palatability, the thin flat sheet of *Kajjali* is *Parpati* which is micronized formulation thus get absorbed easily and reaches to the site of actions through minute

channels. The mixer of mercury and sulphur along with other ingredients when heated in controlled manner in a glass flask and collected at bottom of flask after sometimes then it forms *Kupipakwa Rasa* [9-11].

Benefits of specific methods involved in manufacturing of *Rasa* formulation:

Bhavana helps to achieve finer particles of formulations and improves pharmacokinetic properties of ingredients.

Marana helps to converts non-compatible form of metals/mineral into compatible form. The process eliminates toxic effects of ingredients.

Murchhana is another process involved in preparation of *Rasa* drugs which imparts specific therapeutic benefits. *Murchhana* mainly pacifies toxicity of mercury and improves its quality.

Jarana is process help to bring back *Parad* into its natural form using method like *Galena*, this process give advantages for *Dhatuwada* purpose and improves therapeutic properties of *Parada*.

Cautions need to be taken during preparations of *Rasaushadhies*

- ✓ Heating should be used in controlled manner since excessive heating may deteriorate properties of active ingredients.
- ✓ The preparation of *Rasaushadhies* must be done under the supervision of expert person with proper conduction of stipulated procedures.
- ✓ The minerals & metals must be obtained from authentic sources.
- ✓ Quality evaluation and authentication also required for herbs and other natural materials.
- ✓ The quality evaluation should be performed after every steps of manufacturing process.
- ✓ Time period mentioned for specific procedures should be violated to acquire optimum therapeutic benefits.

Conclusion

The *Rasashastra* is vital modality of Ayurveda which offers many theories related to the uses and preparations of herbo-metallic formulations. The formulations prepared from principles of *Rasashastra* utilize metal, mineral and gems for therapeutic benefits. *Rasashastra* suggested procedures like; *Sodhana* and *Marana*, etc. for preparing *Rasaushadhies*. The components involved in such formulations may belongs from category of *Maha Rasa*, *Ratna*, *Dhatu* and *Visha*, etc. These drugs possess several health benefits including analgesic effect, anxiolytic action, nootropic effect, anti-oxidant, immunomodulation, hepatoprotective, rejuvenating, aphrodisiac and hypoglycemic effects, etc. *Rasashastra* emphasizes specific measures require to be taken while preparing such drugs. The procedures such as; purification, grinding, mixing, heating, churning and incineration, etc. helps to improves therapeutic and pharmaceutical values of formulations prepared from the principles of *Rasa shastra*.

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