



Chronological development of Rasa Shastra

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Course Objectives with Matched Program Objectives

SR1 CO No	A1 Course learning Outcomes (CO) AyUG-RB At the end of the course AyUG-RB, the students should be able to-	B1 Course learning Outcomes matched with program learning outcomes.
CO1	Demonstrate application of principles of Ayurvediya Aushadhi Nirmana (Ayurvedic Pharmaceutics)	PO1,PO5,PO7

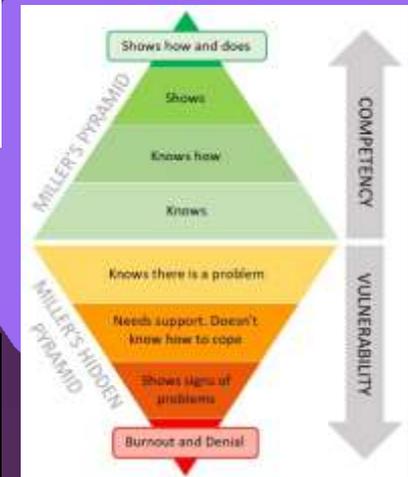
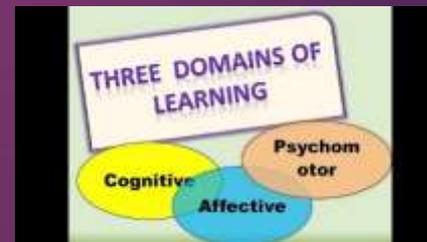
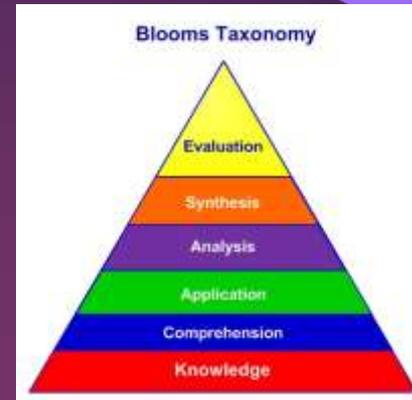
Domain and level

- CLASSIFICATION OF THE TOPIC
MUST KNOW/ DESIRABLE TO KNOW
(MK/DK)

- DOMAIN IN BLOOM'S
TAXONOMY

COGNITIVE KNOWLEDGE (CK)

- LEVEL IN MILLER'S PYRAMID
KNOWS (K)



RASASHASTRA

Definition of "Rasa"

"रसनात् सर्व धातुनाम् रस इत्यभिधीयते" (R.R.S)

Mercury is that substance which is capable of engulfing and consuming (i.e., amalgamating with or dissolving) all metals (sarva-dhātu)

रसरूपिणी इति रसः ।

पारदोऽस्ति तत्स्वरूपं यस्य सा ॥ (R.H.T.)

The substance which remains liquid (at room temperature) and can chemically interact with metals is called Rasa or Parada (Mercury).

RASASHASTRA

Mercury is unique among metals because it stays in the liquid state at room temperature and forms amalgams with many other metals.

In Ayurvedic terms, this "eating" or "engulfing" property signifies its capability to transform or bind with different dhātus (metals/minerals).

Definition of Rasa Śāstra

The term Rasa śāstra is formed by two words:

Rasa (रस) – referring primarily to Mercury (Parada), though it can also represent other metallic and mineral substances.

SCOPE OF RASA SHASTRA

It is a specialized branch of Ayurveda that deals extensively with "Rasa dravyas" (metallic, mineral, and mercurial substances) and their therapeutic preparation. Mercury, which acts upon all metals, is called Rasa.

Mercury is the only metal which can liquify or dissolve all other metals in itself. The treatise that elaborates on Mercury's properties and processes is named Rasa Śāstra.

Rasa Śāstra deals primarily with:

1. Metals (e.g., Gold, Silver, Copper, Iron, etc.)
2. Minerals (e.g., Mica, Realgar, Orpiment, etc.)
3. Products of animal origin (e.g., corals, pearls, etc.)
4. Toxic herbs (e.g., semi-poisonous or poisonous plants)

SALIENT FEATURES OF RASA SHASTRA

1. Focus on Mercury (Parada)-Central to many Rasa-yogas (formulations). Undergoes 18 Samskāras (specific purification & processing) to make it safe and potent.
2. Inclusion of Metals and Minerals Gold, Silver, Copper, Iron, and others are Incinerated (mārana) into Bhasma form for therapeutic or alchemical applications.
3. Products of Animal Origin & Toxic Herbs. Substances like Shankha (conch), Pravala (coral), or herbs like Vatsanabha (Aconite) are processed to remove toxicity and maximize efficacy
4. Therapeutic & Alchemical Goals **Deha Siddhi**: Strengthening and rejuvenating the human body. **Loha Siddhi**: Converting lower metals into higher metals (the alchemical aspect).

Mythological Origin:

Lord Siva

- Lord Śiva is often cited as the mythical source of Parada (Mercury), the foundational substance of Rasaśāstra.
- Many texts describe Mercury as originating from the essence (bindu) of Lord Siva, symbolizing its powerful and transformative nature.

Historical Proponent

Siddha Nāgārjuna

SIDDHA NĀGĀRJUNA

- Considered the founder or foremost proponent of Rasaśāstra in the historical context.
- Inmate of Nālandā University, follower of Buddhism. Explored an alternative to the predominantly herbal system in Northern India by learning Lohavedha (metal transmutation) & Dehavedha (body rejuvenation) in the South.
- Upon achieving Rasasiddhi in the South, he returned north and disseminated these techniques.
- Major Works:

1. Rasendra Mangal

Traditionally, the evolution of Rasaśāstra is divided into five distinct periods:

1. Pre-Vedic Period
2. Vedic Period
3. Samhita Period
4. Rasa Period
5. Modern Period

VEDIC PERIOD

Rigveda:

- Mentions Aśvini Kumāras (divine physicians).
- Vishpala with an iron leg (reference to metal usage in medical context).

Yajurveda

- Cites Svarṇa (Gold), Ayasa (Iron), Loha, Sisa (Lead), Trapū (Tin). Manidharana (use of metals/gems to enhance longevity & strength).
- A quote implies gold improving longevity, luster, and strength.

Atharvaveda:

- Mentions Rajatā (Silver), Lohitāyasa (Copper?), Śisa (Lead).
- Discusses Gandamāla treatment (Shankha-lepa), Mutrāgraha (Shalaka-prayoga).
- References to Sthāvāra & Jaṅgama viṣa (vegetable & animal toxins). Describes 4 types of Cikitsā: Atharvaṇi, Āngirasi, Daivi, Mānuṣi.
- Sisa (lead) is recorded here for the first time.

Significance:

The Vedas provide the earliest textual references to metals and their uses in health and ritual, laying the philosophical foundation for Rasaśāstra.

POST-VEDIC PERIOD

Key Itihāsa & Purāṇa References

Ramayana

- Mentions Manidhāraṇa (wearing gems/metals), metal-made astras, and Śāstras.
- Arka Śāstra by Ravana (possible references to distillation or specialized techniques).

Mahabharata

- Concepts of Jarana (digestion), Marana (incineration), Ucchātana (eradication).
- Mentions Krtrima Svarna (artificial gold).

- Manidhāraṇa again emphasized

Agni Purāṇa and Garuda Purāṇa

- Elaborate on dhatu-bhasma usage.
- For Kustha, references to Manaḥśilā (Realgar) & Haratala (Orpiment) lepa.
- Mention of Ratna utpatti (origin of gems) and Ratna pariksa (gem testing).
- Use of Takra & Loha cūrna in Pandu.
- Hingula (cinnabar) for danta-roga (dental ailments).

Kautilya's Arthaśāstra

- References Sulba Śāstra, Dhatu Śāstra, Rasapāka.
- Notes different mines, metal purification methods (e.g., treating metals with various mutra, kṣāra, etc.).
- Swarna parpaṭi is mentioned.
- Lohabheda: usage of kalāyasa, tāmraṅṛta, śisa, trapu, vaikṛtaka, ārakṛta- indicating an understanding of metal classification.
- Also hints at knowledge of Parada (Mercury) and Hingula (cinnabar).

Significance - These references show the gradual systematization of metallurgical knowledge and therapeutic use of minerals.

SAMHITĀ PERIOD

During this era, we see classical Ayurvedic texts integrating metals, minerals, and mercury-based preparations into mainstream therapeutics.

Caraka Samhitā

Dravya Vargikaraṇa:

- Audbhida (plant origin)
- Jāngama (animal origin)
- Parthiva (earth/mineral origin)

Under Pārthiva dravyas:

Swarna, Rajata, Tāmra, Trapu, Śisa, Loha, Manaḥśila, Haratala, Maṇi, Gairika, Añjana.

Usage:

- Muktādi cūrṇa for Hikka, Śvāsa, Kāsa, Raktapitta.
- Kustha: usage of trapu (Vanga), sisa, loha cūrna, manahśilā, haratāla, kāsisa.
- Pusaman Rituals :

Svarna and Rajata used in specific processes like Nirvapana in godugdha (cow's milk). Nirvapana refers to a process of quenching, cooling, or soaking edicinal substances in a liquid medium to remove impurities or enhance their properties

- Tamra in Garavisa (food poisoning) for Vamana.
- Svarna (gold) with Madhu as Visaghna (antitoxic).

SUŚRUTA SAMHITĀ

- Classification of Pārthiva dravyas includes Swarṇādi dhātu, Mukta, Mani, Manaḥśilā, Mṛtika etc.
- Acknowledges that Swarna and related metals can be absorbed by the body's pitta (heat).
- Trapvādi gana & Uśakādi gaṇa mention various metals.
- Yantra & Śastra (surgical instruments) from different metal alloys. Concept of Puta: Possibly introduced here for incineration.
- Lohabheda: Tīksna (steel) and Kālāloha (cast iron).
- Swarna prāśana samśkāra for immunity

- Reference of Ayyaskṛti, Swarnamakshika and Mandura
- Concept of Puta appears to be developed for the first time by Sushruta and the references regarding Tuvaraka rasayana reflect this.

ASTANGA HRDAYA & ASTANGA SAMGRAHA

- Described Rasa, Guna, Virya, Viapaka of dhatu.
- Mention Shankha, Samudra, Śasyaka, Gairika, Haratāla, Manaḥśilā, Añjana, Śilājatu. Ayaskṛti and Tamra prayoga for netraroga.
- Tamra as Visha nashaka.
- Varti (sticks/pellets) prepared from dhātu and rasa dravyas.
- Rasayana therapy using Svarna, Svarna Makṣika, Rajata Makṣika.
- Parada used internally for the first time in Aṣṭānga Samgraha Rasāyana prakarana.
- Bhasma nirmāṇavidhi (incineration) described in Aṣṭānga Samgraha

RASA PERIOD (APPROX. 11TH TO 16TH CENTURY CE)

Century	Key Text	Author	Highlights
11th CE	Rasa Hridaya Tantra	Govinda Bhagavata	19 chapters (Avabodha)- 18 Samskāras of Parada- Focus: Lohasiddhi, classification of metals
12th CE	Rasarnava	Bhairavananda Yogi	18 Patala (chapters)- Tantrika alchemy in dialogue form (Śiva- Parvati) Jvālā Parikṣā described

13th CE	Rasa Prakāśa Sudhakara	Acārya Yaśodhara Bhatta	13 adhyāyas 4 types of Parada Bandha Kupipakwa Nirman details 103 Rasayogas
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13th CE	Rasa Ratnakara	Siddha Nityanatha	20 chapters: 5 Khandas: 1. Rasa-mainly relates with Vaidya.ii. Rasendra-mainly relates with Vyadhi.iii. Vādi or Riddhi-mainly relates with Dhatuvada or Lohavada.iv. Rasayana - mainly relates with Vrudhha (old age people).v. Mantra-
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15th CE	Rasa Cintamani	Ácārya Śrī Anantadeva Sūri	11 Stavakas-19 methods of Parada Bhasma- Rasa Gutika, Kheçari Gutikā, Rasa Grāsa
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16th CE	Ananda Kanda	Rāja Vaidya Manthan Bhairava	Dialogues between Śiva & Parvati (like Rasarnava)- 2 parts: Viśranti (Amrtikarana) & Kriyākarana 36 Ullāsas (chapters) in total
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Significance of Rasa Period :

- Emphasis on 18 Sanskaras of Parad (For Detoxification & Potentiation)
- Detailed processes of Kupipakwa Rasayan, Parpati & Pottali etc.
- Progressive classification of Metals : Sara Loha, Puti Loha, Samanya Loha

MODERN PERIOD (APPROX. 17TH-20TH CENTURY & BEYOND)

18th CE	Ayurveda Prakaśa	Acārya Madhava Upadhyaya	6 Adhyayas-Dhatu & Dehavada Definitions- Kṣetrikarana concept-Unique Bhasma Parikṣā (Dantāgre na kaca kacā)- Description of Godanti, Oil extraction process from toxic drugs like Bhalataka, Jaypala etc. Methods of Parada Samskara practically possible in this era
18th CE	Bhaiṣajya Ratnāvali	Kaviraja Govindadāsa Sen	Sourced from Chakradatta & Rasendra Sara Samgraha Introduces Pratinidhidravayas Extensive disease-wise vogas (U. P. ...)

20th CE	Rasa Taranginī	Acarya Sadananda Sharma	24 Tarangas- A practical handbook" of Rasaśāstra Only 8 Samskaras of Parada enumerated Individual formulation is enumerated with certain Sahapana and Anupana in different disease Modern methods with Sanskritic nomenclature Gandhakamla, Sorakamla, Lavanamla, Swarnamandala, Rajatamandala, Swarnalavana etc.
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KEY HIGHLIGHTS & OBSERVATIONS

1. **Early Metallurgy**: From Indus Valley and Vedic references to advanced metal purification in Arthaśāstra.
2. **Integration with Ayurveda**: Caraka, Suśruta, and Astānga texts firmly incorporate metals and Mercury in mainstream therapeutics.
3. **Alchemical Milestone**: 11th-16th Century "Rasa Period" gave rise to dedicated Rasa treatises, focusing on Mercury's 18 Samskāras, Kupipākva Rasayana, etc.
4. **Consolidation & Modernization**: 18th-20th centuries saw the synthesis of ancient knowledge with modern chemical insights and easier drug

CONCLUSION

- The chronological progression of Rasaśāstra reveals a gradual but profound maturation of metallurgy, alchemy, and therapeutic applications in Ayurveda.
- From Lord Siva's mythic connection to Siddha Nagarjuna's pragmatic expansions, Rasaśāstra evolved through Vedic references, Samhita integration, a prolific Period, and a Modern wave of standardization.
- Unique texts and innovations, solidifying Rasaśāstra as a critical facet of Ayurvedic pharmaceuticals and alchemy.

Formative Assessment

Author of Rasa Ratna Samuchhaya?

Name metals mentioned in Vaidik kala.

Author of Rasa Tarangini?

Kala of Bhaishajya Ratnavali?

Name Maharasa kept in Rasa Mandapa.



THANK

YOU!