

PHARMACEUTICAL PREPARATION OF *GAUMUTRADI KSHARA* AND ITS PRELIMINARY PHYSICO-CHEMICAL PROFILE

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ABSTRACT

Standardization of herbal drugs is essential to certify their quality and purity. Herbal remedies are having a vital role in health care system. As the habitual usage of herbal drugs has increased worldwide, issues regarding their quality, safety and efficacy have been also raised up. The purpose of standardization of Kshara is to ensure the therapeutic efficacy. *Gaumutradi Kshara* is a caustic alkaline preparation of the cow urine and krishnajirak. *Gaumutradi Kshara* has been explained in *Siddhaprayoga sarsangrah*. It is indicated in disease like yakrutvikara, Plihavikara, Aruchi etc.^[1] This alkaline preparation of gaumutra has many therapeutic usages and even has replaced many surgical procedures and proved to be effective in treating many disorders. So

the present study is planned to prepare *gaumutradi Kshara* and develop its preliminary Physico-chemical profile.

KEYWORDS: Gaumutra, Kshara, Physico-chemical Profile, Sushruta, Standardization.

INTRODUCTION

In present era herbal medicines are widely used in health care. The use of herbal medicines has been increased remarkably worldwide. Ayurveda utilises different forms of herbs in therapeutics. *Kshara* is one among such forms. *Kshara* is the herbal extracts of plants. *Kshara* can be a compound or mixture of many herbs or may be from a single herb. *Ksharas*

are alkaline substances obtained from the water soluble ashes of herbal drugs. Several *ksharas* have explained in Ayurveda for different therapeutic uses. Gaumutradi kshara is one of them. The world health organisation has appreciated the importance of herbal plants for public health care. So it is needed to develop and revalidate the Ayurvedic formulations using modern and ancient parameters. In present study, we prepared *Gaumutradi Kshara* by following reference of *Rastantrasar va siddhaprayogsamgrah second part* For the preliminary physico-chemical profile loss on drying, pH value, ash value, water soluble ash and acid insoluble ash were measured.

MATERIALS AND METHODS

Drug review

Cow urine (Gaumutra)

Recently the cow urine has been granted U.S. Patents (No. 6410059 and 6896907) for its medicinal properties. Gomutra (Sanskrit: गोमूत्र) refers to the usage of cow urine for therapeutic purposes in traditional Indian medicine. Gaumutra is very ancient and popular drugs for various diseases.

Prpretis of cow urine^[2]

Gana : Katu Skandha, Shirovirechana

Rasa : Katu, Tikta, Kashaya, Madhura, Lavana (Anurasa)

Guna : Tikshana, Ushna, Laghu

Veerya : Ushna

Vipaka : Madhura

Doshagnata: Vata-Kapha shamaka, Pitta Prakopaka

Rogagnata : Pliha, Udara, Anaha, Swasa, Kasa, Shopha, Gulma, Malavrodha, Netra and Mukha Roga, Krimi, Vataroga, Kushtha, Arochaka, Arsha etc.

Karma : Agni Pradeepaka

Constituents in Gaumutra^[3]

Studies show gau-mutra consists of 95% water, 2.5% urea and the remaining 2.5%, a mixture of minerals, salts, hormones and enzymes.

Quantitative Chemical Constitution of Gaumutra

➤ Specific gravity 1.025-1.045

- pH 7.4- 8.4
- Urea nitrogen 23-28 ml/kg/day
- Ammonia nitrogen 1.0-1.7 ml/kg/day
- Total nitrogen 40- 45 ml/kg/day
- Allantoin 20-60 ml/kg/day
- Calcium 0.1-1.4 mmol/kg/day
- Chloride 0.1-1.1 mmol/kg/day
- Corproporphyrin 5-14microgram/dl
- Magnesium 3-7 mg/kg/day
- Creatine 15-20 mg/kg/day
- Potassium 0.08-0.15mmol/kg/day
- Na⁺ 0.2-1.1 mmol/kg/day
- Sulphate 3-5 mg/kg/day
- Uric acid 1-4 mg/kg/day.
- Glucose Nil
- Protein- Nil
- Hb –Nil

Enzymes

- Lactate-Dehydrogenase 21.780 unit|lt
- Alkaline Phosphotase 110.110 KA Unit
- Acid Phosphotase 456.620 XA unit
- Amylase 90.236 unit

Other chemicals

- Protein 0.1037gm|lt
- Uric Acid 135.028mg|lt
- Creatinine 0.9970 g|lt
- Lactate 3.7830 milimole|lt
- Phenol 4.7580mg|100ml
- Free volatile phenol 0.7130mg|100ml
- Compound volatile phenol 1.3420mg|100ml
- Aromatic hydroxy acid 2.7030mg|100ml
- Calcium 5.735 milimol|lt

➤ Phosphorous 0.4805milimol|lt

Gaumutra for renal calculus: In experimental study administration of Cow urine ark showed significant anti urolithiatic effect.^[4]

Krishna jiraka (*Carum carvi* Linn.)

Therapuric properties of this drugs are explained in Ayurveda teaxt.^[5]

Ras panchak^[6]

Rasa	Katu
Guna	Laghu, Ruksha
Virya	Ushna
Vipak	Katu
Doshakarma	Kaphavatashamak

Physiochemical parameter^[7]

Moisture: not more than10%, total ash on dry mass: not more than8%, acid insoluble ash on dry basis: not more than1.5%, volatile oil content on dry basis, ml/100g: not less than2.5, alcohol-soluble extractive: not less than 2%, water-soluble extractive: not less than 12%.

Diuretic effect

The diuretic activity of *Carum carvi* was investigated in rats. Water extracts of *Carum carvi* (100 mg/kg) were administrated orally to male Wistar rats and their urine output was quantitated at several intervals of time after the dose. After single doses of the extracts of caraway seeds, urine output was significantly increased at all time points, and at 24 h after the dose, the total volume of urine excreted was similar for the plant extracts and furosemide. *Carum carvi* extracts increased urinary levels of Na⁺ and K⁺, while furosemide increased urinary levels of only Na⁺ and decreased urinary K⁺. In the 8-day sub-chronic study, *Carum carvi* extract induced significant diuresis and natriuresis. The plant extracts did not appear to have renal toxicity or any other adverse effects during the study period.^[8]

Procedure for Preparation of Gaumutradi Kshara

Preparation of Gaumutradi kshara^[9]

It has been prepared by following classical methods.

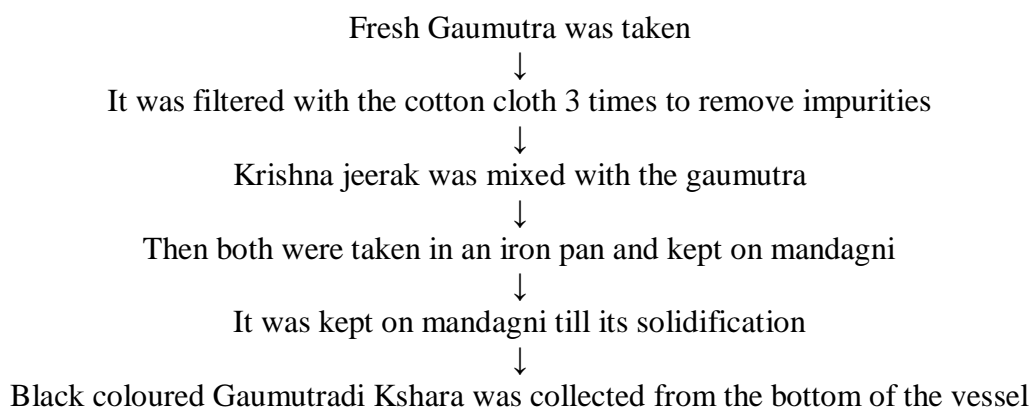
Collection of *gaumutra* and *Krishna jeerak*

Krishna jeerak (*carum carvi*) was collected from the local market of Vadodara and Fresh *gaumutra* collected from cow sheds of LIMDA village.

In Iron pan both ingredients (8 part *gaumutra* and 1 part *Krishna jeerak*) taken. Mandagni given till mixture converted into ash collect ash and preserved it in air tight container.

Indication

Gaumutradikshar according to text: Apachan, Amajirna, Vistabaddhajirna, udarshoola, pandu, mandajwar, pleehariddhi, aamavridhhi, medvridhhi etc it also indicated for shwitra for external application with *gaumutra*.

***Gaumutradi Kshara* preparation flow chart****Pictures of preparation**

Krishan jeerak



Gaumutra

**Mixture of both****Gaumutradi Kshara****Table 1: Observations and results obtained during preparation of *Gaumutradi Kshara***

Observations	Result
Fresh Gaumutra	40 lit
Weight of <i>Krishna jeerak</i>	5 kilogram
Weight of ash obtained	2.4 kilogram

Thus, Gaumutradi kshara prepared in Parul Ayurveda Pharmacy After preparation it was filled in capsule. Each capsule contained 250 mg of drug.

Pharmaceutical Study

The *kshara* was identified and Analytical study for Physico-chemical analysis of drug was carried out in the pharmaceutical Chemistry Laboratory of Parul institute of Ayurved.

A. Physical properties

1. Odour -Gaumutra
2. Taste - Salty
3. Colour - Black
4. Touch – Fine

B. Chemical Analysis.

Sr.no.	Name of the test	Value
1	Loss on drying	5% w/w
2	pH value	8
3	ash value	40% w/w
4	Water soluble ash	92%
5	Acid insoluble ash	1.5% w/w

POSOLGY

- **Dose – Cap.**250 mg three times a day
- **Dosage form -** Capsule
- **Route of Administration -** Oral
- **Time of Administration** Before meal
- **Anupana** – Luke warm water

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