

## SHORT COMMUNICATION

# A Nutritive Value of Chitramutti Varma Kanji for the Management of Vaatha Noigal (Arthritis)

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### ABSTRACT

*Chitramutti Varma Kanji (CVK) exemplifies the integration of traditional Siddha dietary therapeutics with clinical interventions, serving as a complementary nutritional support within Varmam therapy. This medicated gruel combines pharmacologically active herbs with a nutrient-dense profile, aiming to address musculoskeletal and neurological disorders. This article is aimed to assess the efficacy of CVK and to evaluate the nutritional profile of the kanji. Nutritional analysis reveals that CVK contains approximately 84.95% moisture, 87.18 kcal energy, 5 g carbohydrates, 2 g fiber, 10 g protein, and 6.01 g fat per 100 g. Its mineral content includes 0.144 g calcium, 0.703 g iron, and 0.061 g phosphorus per 100 g, supporting bone health and recovery. The low-calorie yet nutrient-rich composition makes it suitable for patients with compromised appetite or digestive capacity. The balanced nutritional profile and therapeutic properties facilitate the restoration of constitutional equilibrium, aligning with Siddha humoral theory. Its integration into Varmam therapy enhances therapeutic outcomes, offering a holistic approach to managing arthritis and related conditions.*

**KEYWORDS:** Chitramutti Varma Kanji, Medicated Gruel, Nutrition Profile, Siddha Medicine, Varmam.

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## INTRODUCTION

Varmam is the science of motion and function of life energy [1]. Varmam therapy is performed not only based on the manipulation but certain medicines like specific decoctions, gruels are given to pacify the prevailing symptoms. Varma Kanjigal, or medicated gruels, are a vital component of Siddha Varmam therapy, functioning simultaneously as nourishment and medicine to restore disrupted pranic energy at injured Varmam points [2]. These easily digestible gruels—prepared by boiling grains such as millets or rice in decoctions or herbal soups, often with ingredients sealed in cloth pouches are fortified with herbal extracts and may include animal-derived substances like milk, meat, and fats to enhance nutritional value [3]. As therapeutic diets, they are designed to avoid aggravating vata dosha while delivering bioactive compounds (e.g., anti-inflammatory, analgesic, diuretic) that promote healing, improve digestion, and replenish energy [3]. Specific formulations, such as Chitramutti Kanji, target conditions like Mudakkam (Any restriction of movements), Ulaichal (Kind of pain), Mathikedu (Psychological diseases), demonstrating the nature of these gruels in treating Varmam injuries [4, 5]. By integrating precise manipulation of pressure points with personalized dietary therapeutics, Varma Kanjigal exemplify the Siddha system's holistic approach to trauma recovery, emphasizing rapid absorption, targeted symptom relief, and overall recuperative support.

## MATERIAL AND METHODS

### AUTHENTICATION AND IDENTIFICATION:

The raw ingredients for CVK were bought from a well-known traditional drug store. An Assistant Professor from the Department of Medicinal Botany at the National Institute of Siddha in Chennai confirmed their authenticity. Each ingredient was then individually purified using standard Siddha methods. Finally, the CVK was prepared in the Gunapadam Laboratory at the National Institute of Siddha, following classical texts.

### INGREDIENTS

**Table 1: Drug Profile of CVK**

S. No	Vernacular Name	Botanical Name
1.	Milk	-
2.	Chittramutti	<i>Pavonia zeylanica</i>
3.	Elarisi	<i>Elettaria cardamomum</i>
4.	Karpogi arisi	<i>Psoralea corylifolia</i>
5.	Thippili arisi	<i>Piper longum</i>
6.	Moongilarisi	<i>Bambusa arundinacea</i>
7.	Vetpalai arisi	<i>Wrightia tinctoria</i>
8.	Valuzhuvai arisi	<i>Celastrus paniculatus</i>

### PREPARATION

The powdered Chittramutti root is placed into a cloth pouch (pottalam). Six varieties of rice (Table - 1) are then boiled together in a mixture of milk and water. After a few minutes of cooking, the pouch containing the Chittramutti root powder is submerged into the boiling liquid and simmered until the mixture achieves a semi-solid, porridge-like consistency (Figure - 1). Then the gruel is filtered and given [4, 5].



**Step - 1 Boiling milk**



**Step - 2 Pouch containing Six types of rice**



**Step - 3 Kanji Preparation**



**Step - 4 Prepared Kanji**

**Figure - 1 Preparation of CVK**

## INDICATION

The kanji is recommended 60ml BD along with Varma manipulation for 3 consecutive days in the treatment of Mudakkam (Any restriction of movements), Ulaichal (Kind of pain), Mathikedu (Psychological diseases) [4,5].

## NUTRITIVE VALUE ANALYSIS

The nutritional analysis was conducted at Tamil Nadu Testing House (TNTH) Private Limited under the project ID TNTH/M-4963/2022-23.

### DETERMINATION OF MOISTURE

Grind the sample to pass through a 1 mm sieve, weigh about 5 g into a pre-dried, tared dish, and dry it in an oven at 130–133 °C for 2 h. After cooling in a desiccator, weigh and repeat heating until a constant weight is reached. Moisture is calculated as  $\text{Moisture (\%)} = (W1 - W2) / W1 \times 100$  [6].

### DETERMINATION OF ENERGY

The ingredients are boiled thoroughly, yielding a well-cooked, easily digestible gruel. Due to its high-water content, Varma kanji has a low energy density of approximately 87 kcal per 100 g, making it a low-calorie preparation compared to the raw finger millet grain (~336 kcal per 100 g) [6].

### ESTIMATION OF CARBOHYDRATES BY ANTHRONE METHOD

Different glucose concentrations (20–100 µg) were prepared from a 10 mg/mL stock and adjusted to 1 mL with distilled water. To each tube, 5 mL of anthrone reagent (2 g/L in concentrated H<sub>2</sub>SO<sub>4</sub>) was added, mixed well, and heated for 10 minutes in a boiling water bath (or 17 minutes at 90 °C) with marbles or caps on top. After cooling, the optical density was measured at 660 nm against a blank, and a standard glucose calibration curve was generated [7].

### ESTIMATION OF PROTEIN BY LOWRY'S METHOD

Reagents were prepared as follows: (a) 2% Na<sub>2</sub>CO<sub>3</sub> in 0.1 N NaOH, (b) 1% NaK tartrate, (c) 0.5% CuSO<sub>4</sub>·5H<sub>2</sub>O, (d) Reagent I: 48 mL A + 1 mL B + 1 mL C, (e) Reagent II: equal parts of 2N Folin–Phenol and water. To estimate protein, 20–100 µg BSA standards and samples (50 and 100 µg) were adjusted to 1 mL with distilled water, with 1 mL water as a blank. After adding 4.5 mL of Reagent, I and incubating for 10 minutes, the mixture was left for 30 minutes, then 0.5 mL of Reagent II was added. Absorbance was measured at 660 nm, and protein content was calculated using the standard curve [8].

### ESTIMATION OF FAT CONTENT

A 2 g sample was weighed and, while still warm, mixed with 0.5 mL hexane. After vigorous shaking, the oil and hexane layers separated. The hexane was evaporated on a heating mantle, and the residual oil was weighed and calculated [9].

### ESTIMATION OF CRUDE FIBER

200 mL of 0.128 M sulfuric acid up to the 150 mL notch was added to 2 g of ground sample. It was preheated by the hot plate. Then it was boiled for 30 min. The solution was filtered onto a separate apparatus using a cloth. Washed 3 times with 30 mL (crucible filled up to the top) of hot deionized water. After draining the last wash, 200 mL of 0.313 M pre-heated sodium hydroxide (NaOH) was added to that. Again, it was boiled for 30 min. Then it was filtered and washed. Finally, the crucibles were cleaned with cold, deionized water to help them cool. The crucibles were removed and the dry weight after drying in an oven at 105°C for an hour or up to constant weight was determined. Cooled in a desiccator. This weight, relative to the initial weight shows the crude fiber plus ash content [10].

### MINERAL ANALYSIS

A 50 mg sample was digested with 1 mL ultrapure nitric acid in a Teflon vessel for 45 minutes using an Anton Paar microwave digester. The digest was diluted to 50 mL, and calibration standards (0.25–10 µg/mL) were prepared with ultrapure nitric acid. The Agilent ICP-OES 5100 VDV was used for analysis with RF power set at 1.2 kW, plasma flow at 12 L/min, and nebulizer flow at 0.7 L/min, introducing samples via a nebulizer and spray chamber [11].

## RESULTS

The nutrient values of CVK are presented in Table 3. CVK has a high moisture content (84.95%) and low energy value (87.18 kcal/100g), making it suitable for low-calorie diets. It contains moderate carbohydrates (5g/100g) and dietary fibre (2g/100g), supporting digestive health. The protein content is relatively high (10g/100g), suggesting good nutritional value. The fat content (6.01g/100g) may contribute essential fatty acids. It is also a source of minerals—calcium (0.144g/100g), iron (0.703g/100g), and phosphorus (0.061g/100g) necessary for bone health, oxygen transport, and metabolism.

**Table 3: Nutritional composition of CVK**

S. No	Parameter	Results
1.	Moisture	84.95%
2.	Energy	87.18kcal/100g
3.	Carbohydrate	5g/100g
4.	Fibre	2g/100g
5.	Total Fat	6.01g/100g
6.	Total Protein	10g/100g
7.	Calcium (Ca)	0.144g/100g
8.	Iron (Fe)	0.703g/100g
9.	Phosphorus (P)	0.061g/100g

## DISCUSSION

Varmam is a non-invasive manual technique employed in the management of both acute and chronic pain, demonstrating efficacy in the treatment of musculoskeletal and neurological disorders [29]. Complementing Varmam therapy, Varma kanji or Medicated Gruel serve a vital function in trauma care and rehabilitation, facilitating recovery processes during post-injury and convalescent phases [30]. *Pavonia zeylanica* (L) Cav. root delivers anti-inflammatory and antioxidant effects to reduce swelling and oxidative damage in arthritis, while *Elettaria cardamomum* Maton provides neuroprotective properties that help alleviate discomfort and fatigue. *Psoralea corylifolia* (L) seeds offer acetylcholinesterase inhibition and antidepressant benefits, supporting patients with chronic pain and its psychological effects. *Bambusa arundinacea* (Retz) Willd contributes anti-inflammatory and anti-ulcer properties, ensuring the formulation is safe for long-term use without causing gastric problems (Table - 2). Based on Siddha concept major ingredients has hot potency which improves the digestion, balance the vatham, prevents from giddiness and fatigue. Efficacy of drugs maintains the equilibrium in three humors of body [29]. The nutritional analysis of CVK revealed a moisture content of 84.95%, indicating its soft, hydrating nature and making it highly suitable for patients with compromised appetite or weakened digestive capacity. Its energy value was found to be approximately 87.18 kcal per 100 g, which positions CVK as a low-calorie therapeutic preparation. This lower caloric load allows frequent consumption, making it ideal for long-term dietary interventions required in managing arthritis and other chronic varmam-induced conditions. The composition further included 5 g of carbohydrates, 2 g of fiber, 10 g of protein, and 6.01 g of fat per 100 g. Its moderate protein and fiber contents aid in tissue repair and gastrointestinal health, while its moderate fat content improves palatability and delivers essential fatty acids. The mineral content calcium (0.144 g), iron (0.703 g), and phosphorus (0.061 g) per 100 g adds significant therapeutic value, supporting bone mineralization, blood health, and recovery (Table - 3) [11]. Altogether, CVK emerges as a comprehensive therapeutic food, combining balanced nutrition with a rich array of pharmacologically active compounds. Its low-calorie yet nutritionally dense profile allows for frequent and long-term consumption. The synergistic effects of its herbal ingredients not only aid in reducing joint and muscular discomfort but also support overall recovery and well-being, making it a valuable adjunct in the traditional management of arthritis and other varmam-induced ailments.

## CONCLUSION

Chittramutti Varma Kanji (Chittramutti Medicated Gruel) represents a significant example of the integration between traditional Siddha dietary therapeutics and clinical intervention protocols, functioning as a complementary nutritional support system within Varmam therapy. The formulation demonstrates anti-inflammatory and neuroprotective properties, specifically targeting musculoskeletal pathophysiology and neurological dysfunction while simultaneously facilitating gastrointestinal homeostasis and restoring constitutional equilibrium according to traditional humoral theory. The optimized caloric density relative to its comprehensive nutritional profile establishes its clinical utility for sustained administration, thereby enhancing therapeutic outcomes and supporting systemic recovery processes in patients receiving conventional traditional medical interventions. This formulation exemplifies the evidence-based potential of integrating traditional pharmacological knowledge with contemporary nutritional science in therapeutic applications.

## AUTHOR CONTRIBUTION

Conceptualization, Data collection and compilation, Manuscript Writing, Proofreading and editing: KK; Data collection and compilation, Proofreading and editing: SE, DM

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## CONFLICT OF INTEREST

THE AUTHOR(S) CONFIRMED THAT NO COMPETING INTERESTS EXIST CONCERNING THE RESEARCH, AUTHORSHIP, OR PUBLICATION OF THIS ARTICLE.

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