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**Standardization and Characterization of Manosilai  
Mathirai Through ICP-OES**

**Dr.Kirubakaran R\*<sup>1</sup> Dr.Subathra D\*<sup>2</sup> Dr.Poongodi Kanthimathi A S<sup>3</sup>  
Dr. Ganesan G<sup>4</sup> Dr. Vanamamalai R<sup>5</sup>**

<sup>1,2</sup>PG student, Department of PG Sirappu Maruthuvam,  
Government Siddha Medical College, Palayamkottai, Tamil nadu, India

<sup>3</sup>Professor & HOD, Department of PG Sirappu Maruthuvam  
Government Siddha Medical College, Palayamkottai, Tamil nadu, India

<sup>4</sup>Grade II Lecturer, Department of PG Sirappu Maruthuvam ,  
Government Siddha Medical College , Palayamkottai Tamil nadu India

<sup>5</sup>Grade II Lecturer, Department of PG Sirappu Maruthuvam ,  
Government Siddha Medical College, Palayamkottai, Tamil nadu, India

**Corresponding authors:**

Dr. Kirubakaran R, PG scholar, Department of PG Sirappu Maruthuvam ,  
Government Siddha Medical College, Palayamkottai, Tamilnadu, India

E-mail:[drkirubakaran1@gmail.com](mailto:drkirubakaran1@gmail.com)

Dr.Subathra D, PG scholar, Department of PG Sirappu Maruthuvam ,  
Government Siddha Medical College , Palayamkottai Tamilnadu, India

E-mail:[drsubathra1@gmail.com](mailto:drsubathra1@gmail.com)

**Abstract**

In Today's scenario, siddha system of medicine is rapidly growing in worldwide. Manosilai mathirai is one of the Wonderful herbomineral formulation in siddha, which is prescribed for the treatment of fever (Kulir suram). But most of the people are avoiding this medicine because of the drug Manosilai mathirai containing Arsenic. This paper aim to bring out, that the drug contains safer level of arsenic with scientific evidence.

**Keywords:** Manosilai mathirai , ICP-OES , siddha, kulir suram

**Introduction**

Siddha Medical System is peerless Medical System compared to other Medical Systems in the world. In our system treat the diseases by using internal drugs, external therapies and special treatments like varmam, yoga and etc. Internal drugs made with arsenic get highlights in our system. Drugs made with purified arsenics like manosilai (Arsenic disulphide), vellai padanam (White arsenic), Ganthagam(sulphur), etc,

are capable of solving great diseases. These types of arsenic containing drugs are rejected in the pursuit of toxins as toxic. Siddha system of medicine portrays about how to purify minerals and how to use it. By the way of superior purification methods, toxic mineral products are converted to non-toxic substances. Otherwise the arsenic level is kept in controlled by method of preparation of drugs. At the end of the study we prove the world, the manosilai mathirai contain safe level of arsenic.

## Materials and Methods

**Table 1 Ingredients of Manosilai mathirai:**

S.no	Ingredients	Chemical /botanical name	Part used	Quantity	
1	Manosilai	Arsenic disulphide		3gram	
2	Tirikadugu	Chukku	<i>Zingiber officinale</i>	Root	16gram
		Milagu	<i>Piper nigrum</i>	Seed	16gram
		Thippili	<i>Piper longum</i>	Seed	16gram
3	Thippili moolam	<i>Piper longum</i>	Root	48 gram	
4	Thulasi	<i>Ocimum sanctum</i>	Juice	sufficient	

### Collection of drugs:

The raw ingredients manosilai purchasing from country medical shop, Nagercoil and the fresh plant of *Ocimum sanctum* collected from Tirunelveli.

### Authentication of raw drugs:

All the above drugs are Authenticated by Associate professor Dr. A. Kingsly M.D(S)., HOD, Department of PG Gunapadam, Government siddha medical college, Palayamkottai

### Purification of raw drugs:

#### Manosilai

Manosilai is grinded with *Zingiber officinale* juice for 3 hours on kalvam without interruption

#### Tirikadugu:

All the three Ingredients of Tirikadugu (chukku, milagu ,thippili ) are roasted on medium flame

#### Thippili moolam:

Roasted on medium flame

## Results

**Table 2 –Elemental analysis**

S.no	Elements	Level
1.	Al 396.152	BDL
2.	As 188.979	BDL
3.	Ca 315.807	22.160 mg/L
4.	Cd 228.802	BDL
5.	Cu 327.393	BDL
6.	Fe 238.204	00.346 mg/L
7.	Hg 253.652	BDL
8.	K 766.491	13.801 mg/L
9.	Mg 285.213	01.324 mg/L
10.	Na 589.592	34.390 mg/L
11.	Ni 231.604	BDL
12.	Pb 220.353	BDL
13.	P 213.617	136.341 mg/L
14.	S 180.731	01.324 mg/L
15.	Zn 206.200	01.258 mg/L

## Discussion

The ICP- OES study demonstrates the level of 14 Heavy metals in our sample manosilai mathirai. In this paper, that the study reveals the presence of safety level of heavy metals and minerals Fe ,Ca, K, Mg, Na, P , S and Zn in Manosilai mathirai and also shows the result BDL of Al, As, Cd, Cu, Hg, Ni,and Pb.

## Conclusion

Under the Study of ICP- OES it strongly reveals the drug manosilai mathirai contains below the human recommended level of arsenic and also shows the presence of various human essential heavy metals and minerals. This paper definitely relieve the fear about the drug containing arsenic, and also gives an awareness to the world to cure the diseases by arsenic containing siddha drugs without any hesitation.

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