



Review Article

REVIEW ON PLANTS USED IN SIDDHA FORMULATION *VATHA SILETPANA SURA KUDINEER*
FOR THE MANAGEMENT OF VIRAL FEVER

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Article info

Article History:

Received: 18-11-2022

Revised: 03-12-2022

Accepted: 22-12-2022

KEYWORDS:

Vatha siletpana suram, Kudineer, Siddha formulation, viral fever.

ABSTRACT

Siddhars said about various diseases and the treatment methods with herbs, minerals and animal products. In Siddha literatures viral fevers can be compared to *Vatha Kapha Suram* and therefore decoction for this *Suram* is taken from classical Siddha text book and the ingredients are searched for pharmacological activity and toxicity study from 118 published journal papers from Pubmed, Scopus, Google Scholar, Research Gate and Science Direct. Collected data is entered in MS excel and analysed using RFC score. All together there are 51 pharmacological activities are published for these nine ingredients. In which Anti-inflammatory has RFC=1, other properties like antipyretic, anti-tussive, bronchodialator, anti-asthmatic, analgesic, neuro-regenerative, neuroprotective, anti-diarrhoeal, anti-emetic, neuroprotective, analgesic, sedative has more than 0.55 RFC score. More than this cardioprotective, renoprotective, hepatoprotective, and other protective properties are present in more than 50% of ingredients. In toxicity studies no toxic effects are seen in *in vivo* studies for the ingredients *The Suvai, Thanmai, Pirivu*, in Siddha aspect, of these ingredients can highly reduces *Vatha* and *Kapha* disorders. Therefore, the decoction shows significant pharmacological activity for the sign and symptoms of viral infections.

INTRODUCTION

For the primary health care needs, most people in this world rely on plant drugs. Nowadays, the world is under the threatening of viral infections and the mortality rate in this viral fever is increasing and it creates panic among the people. Siddha Medicine is one of the ancient Tamil medical system. Disease caused in the human body shows different symptoms. The treatment method of Siddha Medicine is based on three vital humours (*Vatha, Pitha* and *Kapha*) which in turn based on *Panchabootham*. Siddha diagnosis of disease is based on eight types of diagnostic tools (*Envagai thervu*) in which *Naadi* plays an important role. Siddhars said about various diseases and the treatment methods with herbs, minerals and animal products. Therefore the author decided to find out about what Siddha medicine says about viral fever.

Accordingly thirteen Siddha text books were reviewed, in which the term *Suram, Kaichal* and *Jevram* were the names taken in to consideration. There are 182 types of *Suram* along with their sign and symptoms mentioned in text books.^[6] Siddha Medicine says that fever is not a symptom, it consider fever as a disease and among these 182 types of *Suram* (fever), the sign and symptoms of viral fever can be compared to *Kapha suram, Pitha kapha suram* and *Vatha kapha suram*. But it is highly related to *Vathakapha suram* mentioned in Siddha text books.

As this virus infection can be compared to *Vathakapha suram* in Siddha Medicine because, *Vatha* affected due to two reasons. When *Udal thathukal* affected, (plasma and blood) *Saram* and *Senner* is affected, as a result they are unable to protect the body against organisms. Secondly, when *Senner* decreases, it blocks the vessels known as *Thathu* imbalance, and due to this the *Vatha* get imbalance. There are ten types of *Vatham* and *Vatha* plays a major role in doing five main functions of the body. They are breathing, heart and brain function (*Pranan*), blood flow (*Viyanan*), digestion (*Samanan*), expulsion of urine and feces (*Abanan*), vocal sounds and others (*Uthanan*). When the *Vatha* get imbalance, the above functions get

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<https://doi.org/10.47070/ijapr.v10i12.2607>

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affected. At the same time, along with *Samanan vayu*, *Pashaka pitham*, *Kilethaka kapham* and *Jadarakini* get affected and cause digestive problem which results in the formation of *Aamam*. This *Aamam* get absorbed in to the blood and by *Viyanan* it reaches the pores of skin and blocks sweating. This affects *Pitham* (*Pirajaka pitham*) and increases temperature in body. Due to *Vatha* (*Kirukaran*) imbalance, sore throat appears. As the *Pashaka pitham* get imbalance it affects *Pothaka kapam* and *Kilethaka kapham* and so *Kapha* increases. When this is not treated, all the three vital humours get imbalance and leads to disease called *Muppini suram* in which severe complications arises and lead to death.

The major symptoms of viral infection are dry cough, fever and breathing difficulty. The other symptoms include aches and pains, tiredness, sore throat, running nose, diarrhea, nausea, tingling sensation, loss of smell and taste, bluish lips or face, fever mild to moderate and high, new confusion or inability to arouse, headache, general feeling of unwell, chills, sweating, malaise, dizziness^[1,2,3,4]. The authors decided to find out the symptoms related to types of *Suram* mentioned in Siddha Medicine text books. All together nineteen major and minor symptoms were found to be related with *Vathakapha suram* and also more than this some of the other minor symptoms are also mentioned in Siddha texts for *Vathakapha suram*.^[6]

For *Vatha Kapha Suram*, many treatments were given in Siddha. Decoction is one of the easiest and fast acting preparations. Authors had decided to evaluate the herbal plants used in one of the decoction taken from the literature of *Pararajasekaram- suram*, *Sanni, Vali, Vikkal, Sathi roga nithanankal* part- III, Author

Ponniayah.I. page no. 24-25. All together nine plants are used in this decoction and the aim of this study is to find the systematic review on plants used in *Vatha siletpana Sura Kudineer*.

AIM

Review on plants used in Siddha formulation *Vatha Siletpana Sura kudineer* for the management of viral fever

OBJECTIVES

Primary

To list out the pharmacological activity study and toxicity studies done on the plants used in the ingredients of the decoction

Secondary

To compare the pharmacological activities whether related to viral infections.

MATERIALS AND METHODS

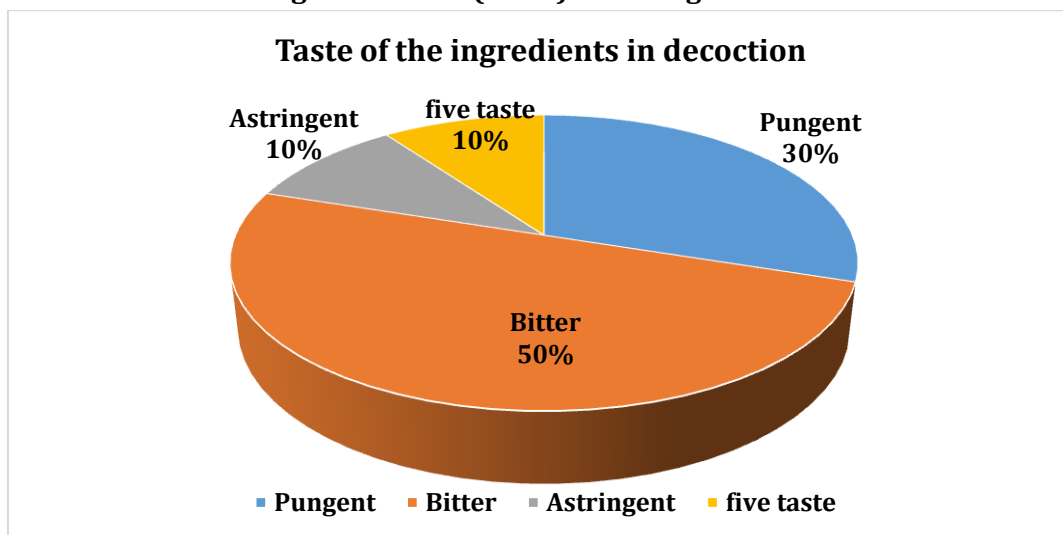
This is a Systematic review, information collected through available research papers, taken from Pubmed, Google Scholar, Research Gate, Science Direct and Scopus. Searched only for the particular plant part used in decoction. Searched only for the single plant study. No review articles are taken. For a single plant one activity is taken only once and data entry with MS Excel. Collected data is analysed with RCS - Related Citation Score.

RESULTS AND DISCUSSION

Siddha Aspect

According to Siddha, taste of the ingredients plays a major role in the treatment of disease based on *Panchabootham*. The taste of all ingredients is given below in the figure.

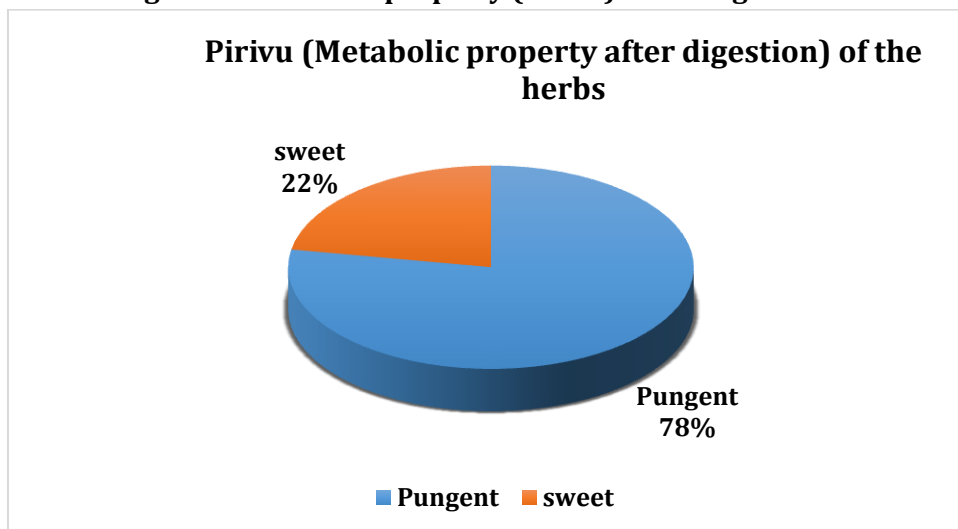
Figure 1: Taste (Suva) of the Ingredients



The ingredients of the decoction has 50% of bitter taste, this taste has the *Panchabootham Vayu* (air) and *Ahayam* (space) and pungent taste has *Panchabootham Theyu* (fire) and *Vayu* (air). These two taste helps to reduce *Kapha* disorders. Again *Terminalia chebula* have all five tastes except salt which helps to balance all *Doshas*. Astringent taste has *Panchabootham Prithvi* (earth) and *Vayu* (air) ^[125]. It helps to reduce *Vatha* disorders

All herbs show hot in potency (*Gunam/Thanmai*) [125]. Potency plays an important role in terms of its impact on the body. Hot potency helps in improving digestion and circulation. For *Vatha* and *Kapha* disorders, hot potency medicine promotes digestion and reduces *Aamam* which causes block in channels. Hot potency calm *Vatha* and *Kapha* and aggravate *Pitha*.

Figure 2: Metabolic property (*Pirivu*) of the ingredients



The taste of the drug during the metabolic property after digestion (*Pirivu*) is considered as the important feature for the treatment process, as this is the absorption state. These ingredients shows 78% of pungent taste [125], which has *Panchabootham Vayu* (air) and *Theyu* (fire). As *Kapha* has the *Panchabootham Piruthvi* (earth) and *Appu* (air), this taste is opposite to *Kapha panchabootham* and therefore helps to reduce vitiated *Kapham*. Similarly sweet taste is 22% in ingredients and it consist of *Panchabootham Piruthvi* (earth) and *Appu* (air) [125], which in turn helps to reduce vitiated *Vatha* disorders which has the *Panchabootham Vayu* (air) and *Ahayam* (space).

Thus, according to Siddha principle, the *Suvai*, *Thanmai*, *Pirivu* of the ingredients in the *Vatha Siletpana Sura Kudineer* is highly helps to reduce *Vatha* and *Kapha* disorders.

Modern Aspect

According to the review on journals, the nine plants are found to be pharmacologically active. Many studies have been done and the total studies are shown in the table below.

Table 1: Pharmacological activity of herbs

S.No	Activity	Botanical names of plants (in short form)									total
		Sol.xan	Cle.ser	Ter.che	Tin.cor	Mol.cer	Sau.lap	Pip.lon	Kae.gal	Alp.off	
1	Anti inflammatory [13,28,44,50,53,68,78,86,96,99]	*	*	*	*	*	*	*	*	*	9
2	Anti pyretic[8,48,59]		*		*	*					3
3	Anti tussive[7,40,88,101]	*		*				*	*		4
4	Bronchodialator[15,29]	*	*								2
5	Spasmolytic[8]					*					1
6	Analgesic[8,52,59,78,92]				*	*	*	*	*		5
7	Anti asthmatic[19]		*								1
8	Anti viral[26,34,45,63,111]		*	*	*			*		*	5
9	Anti emetic[110]									*	1
10	Anti diarrhoeal[105]				*		*		*		3
11	Anti oxidant[17,44,47,84,94,97, 105]	*		*		*	*	*	*	*	7
12	Anti microbial[12,24,69,72,82,107,113]	*	*	*		*	*	*		*	7
13	Anti bacterial[26,30,34,42,80,94]		*	*		*	*			*	5
14	Anti fungal[26,30,34,51,112]		*			*	*			*	4

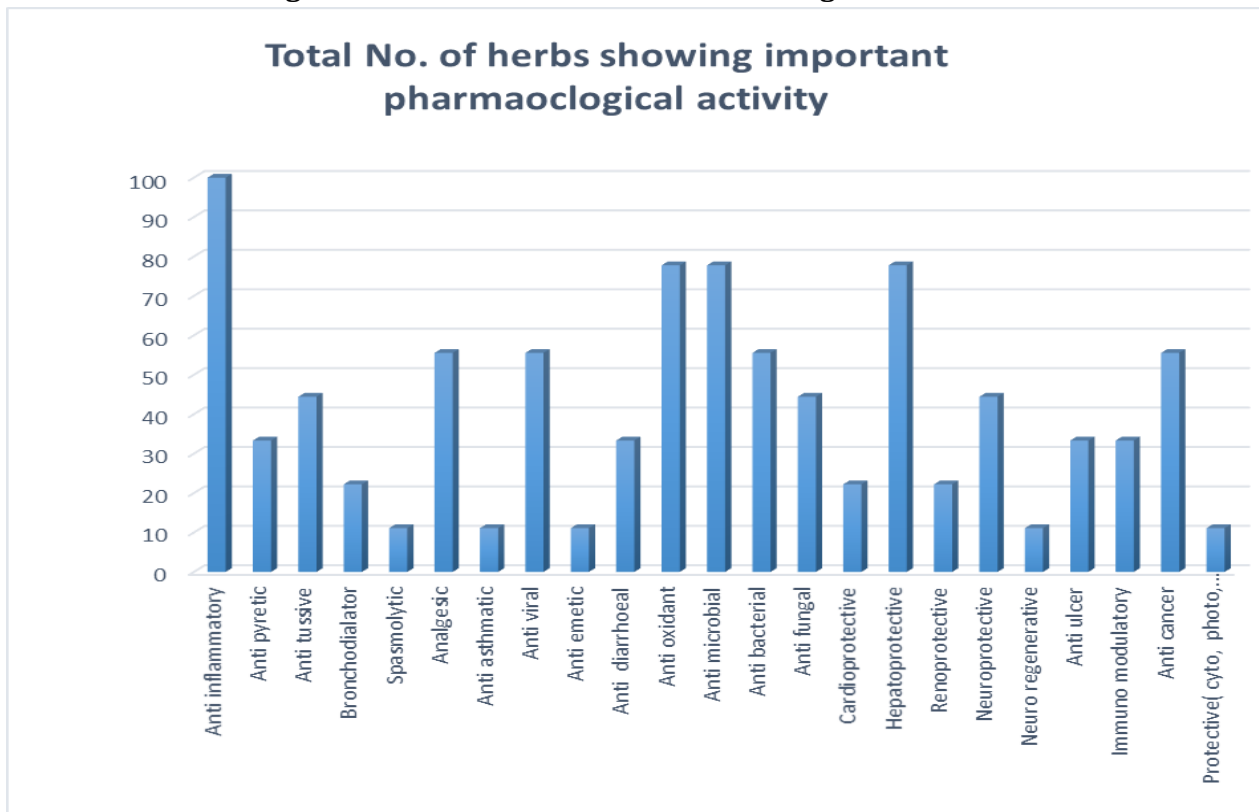
15	Sedative ^[102]							*		1
16	Cardioprotective ^[55,77]				*		*			2
17	Hepatoprotective ^[18,21,25,43,46,71,79]	*	*	*	*	*	*	*		7
18	Anti hepatotoxic ^[21]	*								1
19	Renoprotective ^[16]	*					*			2
20	Neuroprotective ^[8,31,32]	*	*	*	*					4
21	Anti tumour ^[86]							*		1
22	Neuro regenerative ^[48]				*					1
23	Anti ulcer ^[37,61,65]			*	*		*			3
24	Anti cancer ^[14,27,33,49,64]	*	*		*			*	*	5
25	Anti thrombotic ^[125]	*								1
26	Anti hyperlipidemic ^[93]							*		1
27	Anti hyperglycemic ^[17]	*								1
28	Hypoglycemic ^[54]				*					1
29	Wound healing ^[10]	*								1
30	Immuno modulatory ^[51,57,90]				*		*	*		3
31	Anti proliferative ^[24,113]		*						*	2
32	Anthelmintic ^[34,98]		*					*		2
33	Adaptanogenic ^[70]				*					1
34	Anti acetyl cholinesterase ^[66]				*					1
35	Stress response suppressing ^[67]							*		1
36	Insecticidal ^[98]							*		1
37	Anxiolytic ^[81]						*			1
38	Anti angiogenic ^[76]							*		1
39	Anti arthritic ^[42,107]			*					*	2
40	Anti resistant ^[85]						*			1
41	Anti psoriatic ^[11]	*								1
42	Antinociceptive ^[28]		*							1
43	Cellular proiferative ^[74]	*								1
44	Anti lipid peroxidative ^[56]			*						1
45	Membrane stabilizng ^[44]			*						1
46	Cytoprotective ^[58]				*					1
47	Phytoprotective ^[75]					*				1
48	Radioprotective ^[58]				*					1
49	Gastroprotective ^[67]				*					1
50	Hypolipidemic ^[95]						*			1
51	Anti platelet ^[109]								*	1

According to this pharmacological activity review, all the nine herbs (100%) in this decoction has anti-inflammatory activity. as immune modulator three herbs (33.33%) has the activity. one herb has the anti thrombotic activity. Fever, dry cough, dyspnea, sore throat, diarrhea are major symptoms, three herbs has antipyretic activity. Four herbs have anti-tussive activity. Two herbs have bronchodilator activity. One herb has spasmolytic activity. Three herbs have anti-diarrhoeal activity. Loss of smell and taste are main symptoms of neurological complaints. Four herbs have neuroprotective and one herb has neuro regenerative activity viral infections may cause multiple organ failure. and so our plant ingredients have hepatoprotective (77.77%), renoprotective (22.22%), cardioprotective (22.22%), Cytoprotective, radioprotective, gastroprotective,

Vidhya Milano Prasad. Plants Used in Siddha Formulation Vatha Siletpana Sura Kudineer for the Management of Viral Fever photoprotective (11.11%) respectively, plants also have anti-bacterial (55.55%), anti-microbial (77.77%) antifungal (44.44%) and anti-viral (55.55%) activities.

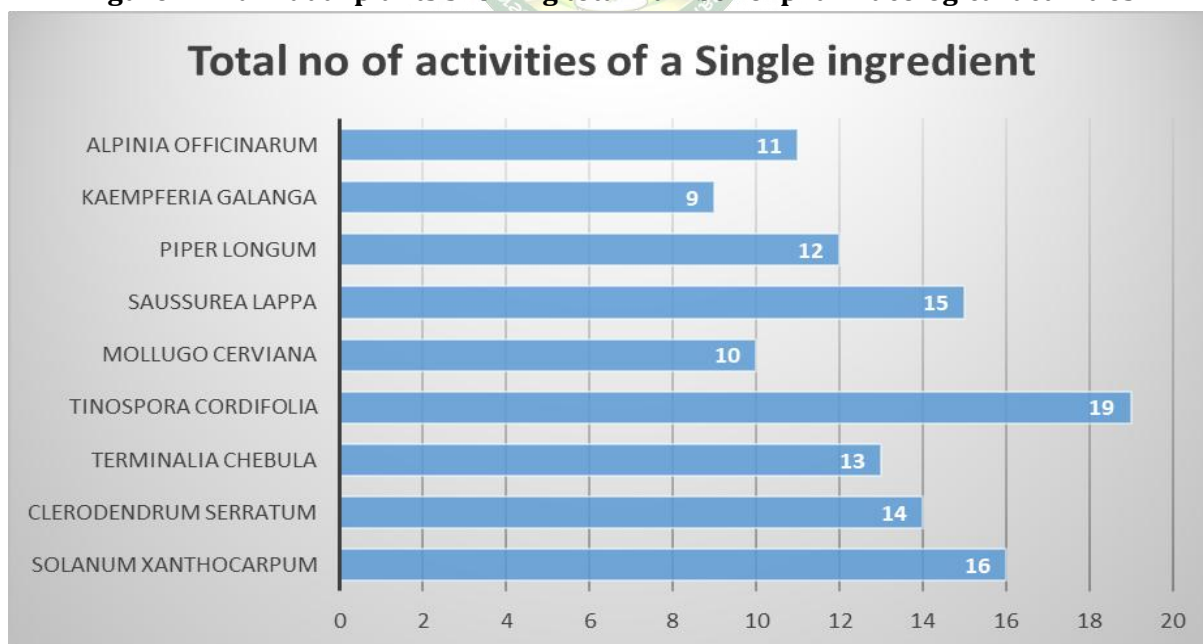
Percentage of some of the important pharmacological activity present in the decoction of herbs are given in the chart below

Figure 3: Number of herbs Vs Pharmacological activities



Single plant shows many pharmacological activities and the chart is given below

Figure 4: Individual plants showing total number of pharmacological activities



For the toxicity search, it is found to be the most plants are non-toxic and two of the plants show toxic effects in very high dosage. It is shown in the table below.

Table 2: Herbs Vs toxicity

S.No	Plants	Toxicity
1	<i>Solanum xanthocarpum</i> ^[21,22]	Non-toxic
2	<i>Clerodendrum serratum</i> ^[113]	Non- toxic
3	<i>Terminalia chebula</i> ^[114,115,116]	Non- toxic
4	<i>Tinospora cordifolia</i> ^[118]	drug at 1000mg/kg exhibited some gross effects like initial excitement, followed by mild depression, dullness, decreased respiration and reduced SMA
5	<i>Mollugo cerviana</i> ^[75]	no studies found in searched journals
6	<i>saussurea lappa</i> ^[119]	Non-toxic
7	<i>Piper longum</i> ^[120]	Non- toxic
8	<i>Kaempferia galanga</i> ^[121,122,123]	No significant toxic effects
9	<i>Alpinia officinarum</i> ^[124]	2000mg/kg body shows toxic effect

CONCLUSION

According to the systematic review on plants used in *Vatha Siletpana Sura kudineer*, it is found that all plants shows significant pharmacological activity for the sign and symptoms related to viral fever and the plants are nontoxic except two plants which are toxic in very high dose. In the decoction according to the procedure, these plants are not used in high doses and therefore it is safety. Further lab research and clinical trial is needed.

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Cite this article as:

Vidhya Milano Prasad. Review on Plants Used in Siddha Formulation Vatha Siletpana Sura Kudineer for the Management of Viral Fever. International Journal of Ayurveda and Pharma Research. 2022;10(12):57-68.

<https://doi.org/10.47070/ijapr.v10i12.2607>

Source of support: Nil, Conflict of interest: None Declared

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