

IJAPC

VOLUME 9 ISSUE 3 2018

GREENTREE GROUP PUBLISHERS

E ISSN 2350-0204

WWW.IJAPC.COM

"A peer-reviewed journal dedicated to allied Sciences"



Int J Ayu Pharm Chem

REVIEW ARTICLE

www.ijapc.com

e-ISSN 2350-0204

A Scientific Review on *Sanjivani Vati* with special reference to its Pharmacological Actions, Therapeutic Indications and Pharmaceutics

Deepika Tewari^{1*}, Vimal Tewari², Kuldeep³, Suhas Chaudhary⁴ and S.K. Tiwari⁵

ABSTRACT

Ayurveda is a complete science of health based on the empirical scientific knowledge that covers all the aspects of life. Since the commencement of life, materials found on the earth have been the major source for drugs. These materials have been one of the basic components that constitute the framework of Ayurvedic drugs. The clinical efficacy of Ayurvedic preparations is well validated by its long history of uses, although various herbal, mineral and herbo- mineral drugs are being screened to validate and document their therapeutic uses on widely accepted protocol of modern science as well as Ayurveda.

Sanjivani vati is a well-known Ayurvedic preparation is being used to treat disorders of the gastrointestinal tract, respiratory tract, fever, and inflammatory joint disorders. This review makes available substantial information on sanjivani vati regarding pharmaceutics and therapeutics aspects, available in various Ayurvedic classical books. It also highlights the pharmacological property of contents used in the preparation of Sanjivani vati to substantiate and emphasize the broad spectrum of uses.

KEYWORDS

Sanjivani vati, Sarangdhar samhita, Ayurveda



Received12/09/18 Accepted03/10/18 Published 10/11/18

¹⁻⁵Regional Ayurveda Research Institute for Infectious Diseases, Patna, Bihar, India



INTRODUCTION

Since many centuries plants and minerals have been used as a drugs and remedies for treatment of various diseases in India as they have great potential for combating the diseases and adverse conditions emerged during pathogenesis. Now-a-days interest of people is increasing to accept Ayurvedic drugs for health benefits. As Ayurvedic drugs are natural and have been used since long so it is assumed that these are pharmacologically effective and have low or no side effects. This logic is among population. flourishing Ayurvedic drugs have become so popular that these are used such as an OTC (Over counter) products. *Chyvanprash*, the Sitopaladi Churna, Triphala churna, Chandraprabha vati, Sanjivani vati are few examples. People have become aware about benefits of such Ayurvedic drugs through experiences. Sanjivani vati is used in daily practices for mostly Jvara (Fever) and Agnimandya (Low digestive fire). Physician use it for the treatment of various other diseases as it is very potential for combating the diseases of different origin. Sanjivani vati has been found to exhibit such a quality which helps to enhance the resistance of body against the disease.

It is quoted first time by *Sarangdhar* in his *samhita* where this formulation is written

under vati kalpana (Tablet section). Sanjivani Vati comprises herbal drugs and an animal product (Cow urine) which restores body's own capability to fight with ailments i.e. helps to strengthen the immune system and rejuvenate the body. It contains Vidang (Embelia ribes), Sunthi (Zingiber officinalis), Pippali (Piper longum), Pathya (Terminalia chebula), Amalaki (Emblica Vibhitaki officinalis), (Terminalia bellerica), Vaca (Acorus calamus), Gudduci (Tinosporia cordifolia), Bhallataka (Semicarpus anacardium), and Visa (Aconitum heterophyllum) in equal amount. Cow urine a very essential component is used here to levigate the ingredients and as binder agent to make pills. It is stated in the text that the weight of the pills should be one Gunja i.e. (125mg). It is mentioned that it should be used in the Ajeerna, Gulma, Visuchika, Sannipata and Sarpadansta. Determination of its dose is a special feature which makes it unique. Sarangadhar mentioned its dose that depended upon diseases i.e. one pills for Ajeerna and Gulma, two for Visuchika, three in Sarpadansta & four in Sannipata condition with the anupan of Adraka swarasa (juices) ¹. Generally a single adult dose is mentioned in the formulary of any preparation and thereafter it is advised to evaluate the doses for man to man according to various factors such as Desha,

Dushya, Bala, Kala, Agni, Prakriti, Vaya, Satva, Satmya, and Ahara. Desha, Dushya, Bala, Kala, Agni, Prakriti, Vaya, Satva, Satmya, and Ahara all these factors are assessed during patient's examination and dose fixation².

Pandit Shri Harishastri dadhichi has mentioned that the dose of Sanjivani vati would be fixed as per the age of patients i.e. between 0-2 year- 1 pill, 3-10 year- 2 pills, 11-32 years- 3 pills and >32 years- 4 pills³. It is considered as an important medicine which could be used in almost any diseases with the use of specific *anupan* (vehicle for that drug).

LITERARY EXPLORATION

Sanjivani Vati in different texts: -The authors of Vrihat Yoga Tarangini, Nighantu Ratanakar, Vrihat Nighantu Ratanakar, Sara Sangraha, Vaidya Ayurveda Chintamani, Yoga Chintamani, Rasa Tantra Sara, Yoga Ratanakar, Yoga Maharnava, Vaidya Rahasya, Basavragiyam, and Chikitsa Kram Kalpavalli – also described Sanjivani vati in their texts. Ayurvedic Formulary of India (AFI) quoted reference of Sarangadhar samhita.

Table 1 Comparative description of Sanjivani Vati in the context of pharmaceutical aspects as per different classical text

S. No.	Name of Text	Ingredients used in the preparation	Pills Size	Doses	Anupana
1.	Sh.S.	Vidanga, Nagara, Pippali, Haritaki,		1-4 tabs. As	
		Amalaki, Vibhitaki, Vaca, Guduchi,		per diseases	
		Bhallataka	Gunjabha	•	Adraka
		Vatsanabha, Gomutra			Swarasa
2.	Bs. ⁴	Chitraka in place of Amalaki, rest	- Do -	- Do -	- Do -
		contents are			
		Similar			
3.	V.C. ⁵	As Basavrajiyam	- Do -	- Do -	- Do -
4.	V.R. ⁶	As Sharangadhara	- Do -	- Do -	- Do -
5.	V.Y.T. ⁷	As Basavrajiyam	- Do -	- Do -	- Do -
6.	Y.C. 8	As Sharangadhara	- Do -	- Do -	- Do -
7.	Y.R. ⁹	As Sharangadhara	- Do -	- Do -	- Do -
8.	Y.T. 10	As Basavrajiyam	- Do -	- Do -	- Do -
9.	N. R. ¹¹	As Sharangadhara	- Do -	- Do -	- Do -
10.	V.N.R. 12	AsBasavrajiyam	- Do -	- Do -	- Do -
11.	AFI. ¹³	As Sharangadhara	No Pill	125mg	Adraka Swarasa,
			size		Warm Water
12.	Sy.Y.S. 14	As Sharangadhara	Gunjabha	1-4 tabs. As	Adraka Swarasa
				per diseases	
13.	A.S.S. 15	As Sharangadhara	1-1 <i>Ratti</i>	1-3 tabB.D.	Adrakha and
					Honey
14.	R.T.S. 16	As Sharangadhara	1-1 Ratti	1-3 tab BD	Water
				Or QID	

Sh.S.-Sarangdhar samhita, Bs.-Basavragiyam, V.C.- Vaidya Chintamani, V.R.-Vaidya Rahasya, V.Y.T.-Vrihat Yoga Tarangini, Y.C.-Yoga Chintamani, Y.R.-Yoga Ratanakar, Y.T. -Yoga Tarangini, N.R.-Nighantu Ratanakar, V.N.R. -Vrihat Nighantu Ratanakar, AFI. -Ayurvedic formulary of India, PSAF.-Pharmacopeial standards of Ayurvedic formulation, Sy.Y.S. -Sidha Yoga Sangraha, A.S.S.-Ayurveda Sara Sangraha, R.T.S. -Rasa Tantra Sara



It is observed from the Table No.1 that one group of authors used Citraka while others used Amalaki in their formulary. Kashiram the Sanskrit commentator ofSharangadhara samhita (Gudarthadipika) depicts that in the paucity of *Bhallataka* one can use *Bakuchi*. Some people have allergy with Bhallataka and its preparation so Rakta chandana can be used as a substitute for such patient. All authors have unanimous opinion on method preparation, therapeutic uses, pills size, doses & anupana of Sanjivani vati.

Preparation of Sanjivani Vati:-

Table No. 2 depicts the name of ingredients of *Sanjivani vati* (plant and animal product), their used parts and physical form. Fine powder of each herbal drug in equal quantity is levigated with sufficient amount of cow urine in mortar. After proper levigation, pills of appropriate size and shape is prepared and dried in shade.

It is recommended that *Bhallataka* and *Vatsanabha* should be used in purified form as these have been described as poisonous drugs in the Ayurvedic texts. *Bhallataka's* fruit is a poisonous part of the tree. It has sharp irritant oil content and if it comes in contact to skin it produces edema and ulcer on skin so it is utmost necessary to purify it before its use. Reducing the amount of irritant oil by adsorption process through *Istika churna* (brick powder) is the method

used for purification of *Bhallataka*¹⁷.Root of *Vatsanabha* is a poisonous part. Fomentation of its root with the help of cow urine in presence of sun rays is the method used for its purification¹⁸.

Ingredients of Sanjivani Vati:-

Table 2 Ingredients of *Sanjivani Vati* and their usable part

S.	Name of	Botanical	Part use	Form o
No.	Drug	Name		Part us
1.	Vidanga	Embalia ribe	Fruit	Powder
2.	Sunthi	Zingiber	Rhizome	Powder
		officinale		
		Rosc.		
3.	Pippali	Piper longur	Fruit	Powder
		Linn.		
4.	Haritaki	Terminalia	Fruit rind	Powder
		chebula Retz		
5.	Amalaki	Embalica	Fruit rind	Powder
		officinalis		
		Gaertn.		
6.	Vibhitaki	Terminalia	Fruit rind	Powder
		bellirica Rox		
7.	Guduchi	Tinospora	Stem	Powder
		cardifolia		
8.	Bhallataka	Semicarpous	Fruit	Powder
		anacardium		
9.	Vaca	Acorus	Root	Powder
		calamus		
10.	Vatsanabha	Aconitum	Root	Powder
		ferox		
11.	Cow urine		Urine	Urine
		_		-

Pharmacological properties and therapeutic actions of ingredients of Sanjivani Vati:-

Every content has one or two unique therapeutic action apart from their other Vidanga has Kriminasana properties; quality; Sunthi is Amadosahara; Pippali Haritaki Sulaprsamana; Anuloman; Sarvadosaprasamana and Amalaki Rasayana; Vibhitaki Kaphapittajita and Bhedaka: Vaca Medhya; Guduchi Jvaraghna, Rasayana

and Raktasodhaka; Bhallataka Vatahara and Kaphahara; Vatsanabha Tridosahara. Cow urine has an ample of health benefits. It is Kaphavatanut and Virechaka.

Table 3 Pharmacological properties and actions of ingredients of *Sanjivani Vati* as per Ayurveda

S. No		Pharmac ogical Property (Virya)	Therapeutic Actions defined in Ayurvedic literature
1.	Vidange		Dipana, Vatakaphahara, Anulomana and Kriminasana
2.	Sunthi ²⁰	Usna	Dipana, Pacana, Anulomana, Amadosahar Vatakaphahara and Hridy
3.	Pippali ²	Usna	Dipana, Pacana, Vatanulomana, Vatahara, Kaphahara, Rucya and Sulaprsamana
4.	Haritak	Usna	Sarvadosaprasamana, Dipana, Anulomana, Hrd andMedhya
5.	Amalak	Sita	Caksusya, Tridosajita, Vrsya and Rasayana
6.	Vibhital 4	Usna	Kaphapittajita, Bhedaka, Kriminasana, Caksusya, Kesya and Kasahara
7.	Vaca ²⁵	Usna	Dipana,Pacana,Vatahara aphahara,Kanthya, Krimihara, Malamutravisodhani,Van andMedhya
8.	Guduch	Usna	Dipana,Tridosasamaka,So grahi,Balya,Jvaraghna Rasayana and Raktasodhaka
9.	Bhallate a ²⁷	Usna	Dipana,Vatahara,Kaphah a,Pacana,Chedaka, Bhedaka and Medhya
10.	Vatsana ha ²⁸		Tridosahara,Rasayana,Sv alaand Pittasantapkara
11.	Cow uri	Usna	Kaphavatanut,Dipana and Virechaka

It has abundant mineral and chemical constituents attributed with different biochemical roles in the body. It also acts as bio enhancer to increase the efficacy of other drugs of the compound. Table No. 3 illustrates the comprehensive information

on Pharmacological properties and actions of ingredients of *Sanjivani Vati* as per Ayurvedic classical books.

Most of the ingredients have Usna virya property except Amalaki that have Sita virya. Sanjivani Vati is best prescribed in Agnimandaya due it its Usna virya and Dipan- Pacan property. It can be used in almost every disease as Agnimandaya is supposed to be the main causative factor of all diseases. It is used in Vatakaphaja or Tridosaja roga. It is advocated that its use in Pittaja roga and people of Pitta predominance Prakruti must be very cautiously. Apart from their common uses, Sanjivani Vati is also used for Krimihara, Jvarghna, Medhya and Rasayana therapeutics actions widely.

Therapeutic indications of Sanjivani Vati:-

In the text, Sanjivani vati has been prescribed in especially Ajeerna, Gulma, Visuchika, Sarpadansta & Sannipata. It has excellent capacity to cure the Kosthagata (Gastrointestinal) especially vyadhi Ajeerna (Indigestion), Agnimandhya (suppression of digestive fire), Shoola (Abdominal pain), Gulma (abdominal and Visuchika distension) (dysentery) empowered by its unique combination of ingredients. Most of its component helps in restoring and maintaining the healthy milieu of abdomen. Jvara (fever) and

Pratishya (common cold) are second most condition where it is prescribed extensively. It is widely used in various other ailments such as Kasa (cough), Krimi (worm infestation) and Sandhigata vata (joint disorder) especially Amavata

(Rheumatoid arthritis) etc. By its *Rasayana*, *Balaya*, *Medhyay* and *Hridaya* properties it also strengthen the vital organ of the body and help in combating the diseases .The table no. 4 describes its indications according to different Ayurvedic books.

Table4 Therapeutic indications of Sanjivani Vati mentioned in different Ayurvedic Classics

S.No.	Name of Text	Name of Diseases	
1.	Sh.S.,Bs.,V.C.,V.R., V.Y.T.,	Ajeerna,Gulma ,Visuchika , Sarpadansta , Sannipata	
	Y.C., Y.R., V.T., N.R., V.N.R.,		
	A.F.I.		
2.	Sy.Y.S.	Ajeerna,Gulma ,Visuchika , Sarpadansta ,Sannipata	
3.	A.S.S.	Jwara, Shoola , Visuchika, Gulma , Sarpadansta	
4.	R.T.S.	Jwara, Ajeerna , Krimi, Gulma , Udarashoola , Visuchika, Kasa ,	
		Sannipata	

Pharmacological activity of ingredients of Sanjivani Vati:-

Sanjivani Vati has wide range of medicinal and pharmacological applications. According to the different sources (Table No. 5) that depicted pharmacological activity of its ingredients, it is considered

especially Analgesic, Antispasmodic, Carminative, Anti-diarrhoeal, Gastroprotective, Antitussive, Emmenagogue, Stimulant, Stomachic, Vermifuge, Anti microbial, Antipyretic and Immunomodulator.

Table 5 Pharmacological activity of ingredients of Sanjivani Vati as per the different modern texts

S.	Ingredients of	Pharmacological activity as per modern literature	
No.	Sanjivani Vati		
1.	Embalia ribes ³⁰	Analgesic, Anthelmintic, Anti-anxiety, Antibacterial, Ascaricidal,	
		Antinematodal, Anticancer, Antifungal, Anti-histaminic	
2.	Zingiber officinale ³¹	Antioxidant, Antimicrobial, Growth promoter and Immuno-stimulant	
3.	Piper longum ³²	Anti tumor, Anti-diabetic, Antimicrobial, Anti inflammatory, Hepato-protective,	
		Anti arthritic, Anti apoptosis, antioxidant ,ant infertility, Anti-stress	
4.	Terminalia chebula ³³	Antibacterial, Anthelmintic, Antiviral, Antifungal, Antimutagenic&	
		Anti-carcinogenic, Anti-amoebic, Anti-plasmodial, Antioxidant, Anti-arthritic,	
		Wound healing activity, Anti-diabetic, Retino-protective and Radio-protective.	
5.	Embalica officinalis ³⁴	Antioxidant, Anti-hyperthyroidism, Gastro-protective, Immuno-modulator,	
		Hepato-protective, Prevention of cataract, Anti-diarrhoeal, Anti-tussive,	
		Antipyretic, Anti-analgesic, Prevention of atherosclerosis, and Hyperlipidemia.	
6.	Terminalia bellirica ³⁵	Analgesic, Antihypertensive, Antispasmodic, Bronchodilator, Antimicrobial,	
		Anti- diarrheal, Antioxidant, Anticancer, Antiulcer, Wound healing,	
		Immuno-modulator, Hepato-protective.	
7.	Acorus calamus ³⁶	Antibacterial activity, Antifungal, Antiulcer and Cytoprotective activity,	
		Antispasmodic activity, Anticonvulsant activity, Antitumour activity,	
		Antioxidant activity, Anti-inflammatory activity, Bronchiodilatory effect,	

		Antidiabetic activity, Antihepatotoxicactivity, Anti mutagenic activity,
		Hypolipidemic activity, Insecticidal activity, Antidiarrheal activity,
		Anti cancer activity.
8.	Tinospora cardifolia ³⁷	Anti cancer/ Anti tumor activity, Anti inflammatory activity,
		Anti diabetic and Anti Hyperglycaemic activity, Anti oxidant activity,
		Antistress activity ,Antiulcer activity, Immuno modulatory activity,
		Hypolipidaemic activity, Hepatoprotective activity,
		Cognition (learning andmemory) activity, Antimicrobial activity.
9.	Semicarpous anacardium ³⁸	Analgesic activity, Hypoglycemic effect, Hepatoprotective effect,
		Anthelmintic activity, Neuroprotective activity, Anticancer activity,
		Anti-inflammatory activity, Antispermatogenic activity, Antioxidant activity,
		Anti microbial activity, Antiatherogenic activity, Hypolipidemic and
		Hypocholesterolemic activity, Memory enhancing and cardioprotective activity.
10.	Aconitum ferox	Analgesic activity ³⁹ , Anti-inflammatory activity ⁴⁰ , Antipyretic ⁴¹ ,
		Hypoglycaemic ⁴² and Immuno-modulator activity ⁴³
11.	Cow urine 44	Antioxidant, Anti-diabetic, Immuno-modulator effect, Antibacterial activity,
		Antifungal, Anticancer, Wound healing property, Anti-clastogenic,
		Hepato-protective and Bio-enhancing activity

CONCLUSION

Sanjivani Vati is widely used against the various diseases due to its diverse quality. In this review, we have attempted to congregate the various reference of Sanjivani Vati to explore its formulary and to describe the therapeutic indications comprehensively. Composition therapeutic indications are found more or less similar in every reviewed text. Sanjivani Vati has Usna virya, Dipana and Vatakaphahar property and it act on Agni also. These properties are utilized in the ofvarious treatment diseases by practitioners. However, more clinical trials should be conducted to support its therapeutic use. As per modern science the Sanjivani contents Vati have Antioxidant, Anti inflammatory, Anti

microbial and Hepato-protective effect. The pharmacological actions of its contents described in modern text could be used as a subject for clinical studies for validating its rich therapeutic potential.

REFERENCES

- 1. Sharngadhar. Sharngadhar Samhita with Jiwanprada Hindi commentary by Dr. Smt. Shailaja Srivastava. Chaukhambha Orientalia Varanasi, 2nd Edition 1998, Madhyam Khanda, Ch. 7, Sl. 18-21.
- 2. Vagbhata. Astanga Hradayam with the commentaries Sarvangasundra of Arundutta & Ayurved Rasayana of Hemadri edited by Pt. Bhisagacharya Harishastri Paradkar Vaidya. Krishnadas Academy Varanasi, Reprint 2000, Ch.12, Sl. No.67-68.
- 3. Pt. Shri Harishastri Dadhichi. Sanjeevani Samrajiyama with Hindi Commentary by Vaidya Madana Gopal Sharma translated by Vaidya Vachaspati Sharma. Published by Shri Ashwani Ayurveda Bhawan Jaipur (Raj.), First Edition, Ch.2, P.41-42.
- 4. Basavaraju Nilakantha Kotturu. Basavarajiyam with English translation by Dr. A. Narayana. Published by NIIMH Hyderabad, First edition 2013, Ch. 12, P.433.
- 5. Vallabhacharya .Vaidya Cintamani edited by Dr.Ramnivas Sharma. Dakshin Publishers Hyderabad, 1st Edition 1994, Ch .14, P.No.406.
- Vidyapati. Vaidya Rahasya edited with Hindi commentary by Dattaram Chaturvedi. Published by Khemraj

- Shrikrishan Das Mumbai, Edition 1934, Ch. Agnimandha Chi., Sl. 15-17.
- 7. Trimall Bhatta. Vrihat Yoga Targini edited by Hanumant Padheya Shastri. Published by Aanand Aashram, Pune, Part 1, Ch.71, Sl.42-44.
- 8. Harsh Kirti .Yoga Cintamani with Ayurveda Dipika Hindi commentary by Chaturveda Narayan Datt Pathole. Published by Bombay Bhushan Press, Ch.3, Sl.1-4.
- 9. Mayurapada Bhiksu. Yogratnakara with Vidyotini Hindi commentary by Vaidya Laksmipati Sastri edited by Bhisagratna Brahma sankar Sastri. Published by Chaukhamba Sanskrit Sansthan Varanasi, 7th Edition 1999, Ch. Ajirna Chi., Sl.1-3.
- 10. Trimall Bhatta .Yoga Tarngini with Hindi commentary by Sri. Dattaram Mathur. Published by Laxmi Vanketeshwar Press Kalyan Mumbai, Edition 1923, Ch. 24, Sl.10-11.
- 11. Vishnu Vasudev Godbole. Nighantu Ratnaker with Marathi commentary by Ganesh Ramchandra Shastri Dattar, Bhasker Anant Shastri Thomnekar, Krishna Shastri Mahabal and Vishwanath Vinayak Patil. Published by Mumbai Orientalia, Edition 1847, Part 3, Ch. Ajirna, P.406.
- 12. Vishnu Vasudev Godbole. Vrihat Nighantu Ratnakar edited with Hindi commentary. Published by Khemraj

- Shrikrishan Das Publishers, Edition 1891, Part 5, Ch. 1, P.23.
- 13. The Ayurvedic Formulary of India. Published by the Controller Of Publications Delhi, First English Edition 2000, Vol. -2, Section 12 Vati Prakarana, P. 154.
- 14. Vaidya Yadavji Trikamji Acharya. Sidha Yoga Sanghra. Shree Baidyanath Ayurveda Bhawan Limited, Patna, 10th Edition (2000), Ch.1/P.5
- 15. Ayurveda Sara Sangraha. Shri Vaidyanatha Ayurveda Bhawana Limited Calcutta, Ninth Edition 1999. Gutika-Vati Prakarana P.469.
- 16. Rasa Tantra Sara. Krishna Gopal Ayurveda Bhawan Kaleida Ajmer, 13th Edition 1999, Part 1, Gutika Prakarana, P. 613.
- 17. Prof.P.V.Sharma. Dravyaguna Vijnana. Published by Chaukhambha Bharti Academy Varanasi, Edition 1995, 4th Khand, 4th Ch., P.344
- 18. Basavaraju Nilakantha Kotturu. Basavarajiyam with English translation by Dr. A. Narayana. Published by NIIMH Hyderabad, First edition 2013, Ch. 25, P.888.
- 19. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol. 1, P.123
- 20. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol. 1, P.103

- 21. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol. 2 .P.133-134
- 22. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol. 1, P.47
- 23. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol. 1, P.424. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol.1, P.26
- 25. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol.2, P.168-170
- 26. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol.1, P.41
- 27. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol.2, P.19-20
- 28. Ayurvedic Pharmacopeia of India. The Controller of Publications Delhi, Vol.2, P.171-172
- 29. Sushruta. Sushruta Samhita with Ayurveda Tatva Sandipika Hindi commentary by Kaviraja Ambika Dutta Shastri. Chaukhambha Sanskrit Sansthan Varanasi,Ninth Edition 1995, Part 1, Su.St.-45, Sl.N.220-221
- 30. Souravi K. and Rajasekharan P E. Ethno pharmacological Uses of Embelia ribes Burm. F. A Review. IOSR Journal of Pharmacy and Biological Sciences (IOSR-

- JPBS), E-ISSN: 2278-3008, P-ISSN: 2319-7676. Vol. 9, issue 3, Ver. III, P. 23-30 (May- Jun 2014)
- 31. Shakya Shubha Ratna. Medicinal uses of ginger (Zingiber officinale Roscoe) improve growth and enhance immunity in aquaculture. International Journal of Chemical Studies, Vol.3(2),P. 83-87 (2015)
- 32. Srivastava Preeti. Therapeutic potential of Piper longum L. for disease management a review. International Journal of Pharma Sciences, Vol. 4, No. 4, P 692-696 (2014)
- 33. Gupta Prakash Chandra. Biological and Pharmacological Properties of Terminalia chebula Retz. (Haritaki)- An Overview. International Journal of Pharmacy and Pharmaceutical Sciences, ISSN-0975-1491, Vol.4, issue 3, P.62-68 (2012)
- 34. Patel S. S. And Goyal R. K. Emblica officinalis Geart.: A Comprehensive review on Photochemistry, Pharmacology and Ethnomedicinal Uses. Research Journal of Medicinal Plant, ISSN 1819-3455IDOI: 10,3923I rjmp.2011.
- 35. Deb Anindita, Barua Sikha and Das Biswajit. Pharmacological activities of Baheda (Terminalia bellerica): A review. Journal of Pharmacognosy and Phytochemistry, Vol.5 (1) ,P. 194-197 (2016)

- 36. Shetty G Raviraja and ShruthiA M. A review on pharmacology of Acrous calamus An endangered medicinal plant. International journal of pharma and Bio sciences, ISSN 0975-6299, Jan 2015, 6(1), P 605-621
- 37. Dwivedi M S K and Enespa. Tinospora cordifolia with reference to biological and Microbial properties. International journal of current Microbiology and applied sciences, ISSN 2319-7706,Vol. 5 Number 6, P.446-465
- 38. Mishra Sanjeeb Tiwari Kumar, and Prashant Sahu Pratap Kumar. Pharmacology, Phytochemistry and Toxicology of Semecarpus anacardium. International journal of Pharmaceutical Sciences Review and Research, ISSN 0976- 044X ,Vol. 42 (2) P. 25-31
- 39. Murayama M. and Hikino H. Stimulating actions on ribonucleic acid biosynthesis of aconitines, diterpenic alkaloids of Aconitum J roots. Ethnopharmacol 1984, 12(1):P.25-33.
- 40. Hikino H., Takata H., Fujiwara M., Konno C., and Ohuchi K. Mechanism of inhibitory action of mesaconitine in acute inflammations. Eur J Pharmacol 8-13-1982, 82(1-2), P.65-71.
- 41. Saito H., Ueyama T., Naka N., Yagi J., and Okamoto T. Pharmacological studies of ignavine, an aconitum alkaloid.

Chem.Pharm Bull. (Tokyo) 1982, 30(5), P.1844-1850.

- 42. Konno C., Murayama M., Sugiyama K., Arai M., Murakami M., Takahashi M., and Hikino H. Isolation and hypoglycemic activity of aconitans A, B, C and D, glycans of Aconitum carmichaeli roots. Planta Med1985, (2), P.160-161.
- 43. Kimura I., Makino M., Honda R., Ma J., and Kimura M. Expression of major histocompatibility complex in mouse peritoneal macrophages increasingly depend on plasma corticosterone levels: stimulation by aconitine. Biol Pharm Bull 1995, 18(11), P.1504-1508.
- 44. Singla Sonia and Kaur Satwinder. Biological Activities of Cow Urine: An Ayurvedic Elixir. European Journal of Pharmaceutical and Medical Research, Vol. 3(4), P. 118-124 (2016).