

SCREENING OF ANTI-TOXIC(VISHGHNA) PROPERTY OF MANJISTHADI AGAD: A REVIEW

Dr. Sarika T. Kharat*¹, Dr. S. P. Mirajkar², Dr. S. M. Lahankar³ and Dr. Dhanashree
T. Dhere⁴

PG Scholar¹, Asst. Professor², Asso. Professor³, PG Scholar⁴

^{1,2,3,4}Department of Agadtantra, Govt. Ayurvedic College, Osmanabad.

Article Received on
28 Feb. 2019,

Revised on 21 March 2019,
Accepted on 11 April 2019,
DOI: 10.20959/wjpr20196-14822

*Corresponding Author

Dr. Sarika T. Kharat

PG Scholar, Department of
Agadtantra, Govt. Ayurvedic
College, Osmanabad.

ABSTRACT

Agadtantra is branch of *Ayurveda* which deals with identification of *Visha* (poison), types of *Visha* (poison), signs, symptoms and their *Chikitsa* (Management). *Agada* means formulation of *Vishaghana Dravyas*. There are many *Agadas* described in *Ayurvedic Samhita*. They are used for internal as well as external purpose. *Manjisthadi Agad* is one of the *Kalpa* explained by *Bharat Bhaishjya Ratnakara*. It is prepared by using *Vishghna* herbs and used in *Visha Chikitsa*. In this review article pharmacological and therapeutic action as well as anti-toxic (*Vishghna*) property of *Manjisthadi Agad* along with each ingredient will be discussed.

KEYWORD: Manjisthadi Agad, Visha, Antioxidant.

INTRODUCTION

Agadtantra is one of the branch of *Ayurveda* in which *Ayurveda* medicine is traditionally divided. *Gada* means a disease and *Agad* means any agent which makes the body free from disease; however the term *Agad* is used specifically for the branch of medicine dealing with toxicology, the description of the different types of poisons, and their antidotes.

Ayurveda has explained numerous medicinal preparations both external as well as internal for the management of *Visha* (poison).

Visha means the *Dravya* (substance) which causes *Vishad* (sorrow/depression).^[1] Drugs which act against toxic substance are called as *Vishaghna* (Anti-toxic). potency and efficacy

of *Ayurvedic* preparations depend upon quality of drug, *Desha* (region), *Kala* (time), *Ritu* (season), preparation method and route of administration .

Manjishthadi Agad is one of the drug explained by *BHARAT BHAISHAJYA RATNAKARA*^[2] for the treatment of poison. All the contents of *Manjishthadi Agad* have been evaluated according to the various literatures and *have Tridoshghna* property especially *Kaphvataghna* in action.

This article is based on the textual review and descriptions related to *Manjishthadi Agad* which are collected from *Bharat Bhaishajya Ratnakara*, the related scientific publications and textual literature are also referred .This article reviews Therapeutic screening of anti toxic (*Vishghna*)properties of *Manjishthadi Agad*.

AIM

To study the anti-toxic action of *Manjishthadi Agad*.

OBJECTIVES

1. To study therapeutic and pharmacological action of each ingredient of *Manjishthadi Agad*.
2. To study pharmacological and anti-toxic action of *Manjishthadi Agad*.

MATERIALS AND METHODS

The whole study is based on literary review collected from *Ayurved Samhita*.

Method of preparation of *Manjishthadi Agad*

All ingredients are taken in same quantity and mixed well.

Table no. 1. *Raspanchaka* of ingredients of *Manjisthadi Agad*.^[3,4,5]

Sr.no	Name	Latin Name	Ras	Virya	Vipak	Guna	Karma
1	<i>Manjistha</i> ^[3]	Rubia cordifolia	Tikta, Kashay, Madhura	Ushna	Katu	Guru, Ruksha	Kusthaghna, Kandughna Raktaprasadan
2	<i>Ela</i> ^[3]	Elettaria cardamomum maton	Katu, Tikta	Ushn	Katu	Laghu,ruksha	Kafaghn, Kandughn
3	<i>Draksha(mrudvika)</i> ^[4]	Vitis vinifera	Madhura	Shita	Madhur	Snighda,mrudu	Pitaghn, Raktprasadan, Dahashamak
4	<i>Nisha</i> ^[3]	Curcuma longa	Tikta, Madhura	Ushn	Katu		Kusthaghna, Kandughna, Vishaghna
5	<i>Jatamansi</i> ⁽³⁾	Nardostachys jatamansi D	Tikta, Kashay, Madhura	Shita	Madhur	Laghu	Vedanasthapan, Shothhara
6	<i>Yashtimadhu</i> ⁽³⁾	Glycerrhiza glabra	Madhura	Shita	Madhur	Guru, Snigdha	Dahshaman, Kandughna
7	<i>Harenuka</i> ⁽⁵⁾	Vitex Agnus- Custus	Tikta, Katu	Ushna	Katu	Laghu, Ruksha	Vishaghna, Kafaghna

- **MANJISTHA**

Latin name –Rubia cordifolia Linn.

Family – Rubiaceae^[3]

Chemical constituent- Manjistin, Purpurin, Xanthine, Garancin, Alizarin.^[6]

Pharmacological action

1. Anti-inflammatory action: It exhibited the inhibition of lipoxigenase enzyme pathway responsible for anti-inflammatory action.
2. Anti-microbial action: suppressed the activity of phytopathogens and gossypium klebsiella pneumonia, E.coli, streptomycin.
3. Anti-acne property- it shows activity against propionbacterium acne, staphylococcus Epidermis.
4. Anti-convulsant activity – Triterpenes inhibited seizures induced by electric shock, chemo convulsant.
5. Anti-platelet activity: Inhibits action of platelet activating factors at its receptor level either by its blocking or desensitization property.
6. Anti-viral –naphthoquinones have antiviral action.
7. Anti-stress- Enhance brain gamma amino-n-buteric acid level and decreased brain dopamine and plasma corticosterone levels.

8. Immuno-modulating –alkaloids, cardiac glycosides, tannins responsible for enhanced immunomodulation.
9. Anti-ulcer, anti-arthritic property, anti-diabetic^[7]

Pharmacological action according to Ayurveda: *Vishaghna, Varnya, Kaphaghna, Kushthaghna, Shothaghna, Raktadoshahara, Pramehaghna, Yonirogahara.*^[8]

Therapeutic action: *Vatrakta, Dadru, Shwitra, Ashmari, Prameha, Visarpa, Asthibhagna, Dagdha vrana.*^[8]

Anti-toxic action: Manjistha is an ingredient of *Rishbha Agada.*^[9] *Mahaagada,*^[10] *Ksharagada*^[11], *Vishaghna mahakashaya.*^[12] It is used for treatment of *Tritiya Visha Vega*^[13] mentioned by *Acharya Charaka.*

2. SUKSHMA ELA

Latin name- *Elettaria cardamomum maton*

Family- Zingiberaceae^[3]

Chemical constituent- volatile oil terpene, terpineol^[14]

Pharmacological action^[15]

1. Antioxidant
2. Antimicrobial activity
3. Antiulcerogenic activity
4. Gastroprotective activity

Pharmacological action according to Ayurveda

Kasaghna, Mutral, Arshoghna, Shwasaghna, Chardinigrahana, Trushnanigrhana, Sugandhi, Uttejaka, Deepan, Pachana^[14]

Therapeutic action: *Vatanulomak, Timir nashak, Danta roga, Mukharoga, Hrudroga.*^[14]

Anti-toxic action: It is one of the ingredient of *Balasurya Agada*^[16] *Sugandhyakhya Agada*^[17], *Kalyanak Ghrita*^[18], *Gandhamadana Agada*^[19], *Mandara Agada.*^[20] It is one of the content of *Lootavishnashaka yoga*^[21]

3. *Haridra*

Latin name – *Curcuma longa* Linn.

Family- Zingiberaceae^[3]

Chemical Constituent – Curcumin, Curcumen, Albuminoids, Starch^[22]

Pharmacological action

1. Anti-bacterial
2. Anti-inflammatory-It reduces inflammation by lowering histamine levels and producing natural cortisone by adrenal glands.
3. Anti- cancer- It helps to prevent the new cancers growth that are caused by chemotherapy or radiation. Curcumin affects a variety of growth factor receptor and cell adhesion molecules involved in tumor growth, angiogenesis and metastasis.
4. Anti-oxidant-It has a strong capability for scavenging superoxide radicals, hydrogen peroxide and nitric oxide from activated macrophages reducing iron complex and inhibiting lipid peroxidation.
5. Anti-microbial –Inhibits the growth of various bacterias like staphylococci, streptococci.
6. Anti-fungal- It is active against *Aspergillums flacus*, *A. parasiticus*^[23]

Pharmacological action according to Ayurveda: *Vishaghna, Kaphaghna, Shothaghna, Pandughna, Pramehaghna, Twakdoshghna, Vataghna.*^[24]

Therapeutic action: *Pradara, Kandua, Pama, Shitapitta, Udara, Vicharchika, Arsha, Daha, Bhrama, Shlipada.*^[22]

Anti-toxic action: It is one of the ingredient of *Ajeya Ghrita*^[25], *Sanjeevan Agada*^[26], *Mahaagada*^[10], *Ksharagada*^[11], *Kalyanaka Sarpi*^[18], *Mahasugandhi Agada*^[27], *Rajanyadi Agada.*^[28] It is mentioned in *Yoga* used in *Tritiya* and *Ashtam Vega Chikitsa*^[13] described by *Acharya Charaka*. *Haridra* is one of content of anti toxic preparation like *Gandhahastinam Agada*^[29], *Mruta Sanjeevan Agada*^[30], *Mahagandhhastinam Agada*^[31], *Paramogada*^[32], *Chandroday Agada*^[33], *Vajra Namak Agada*^[34], *Padmakagada*^[35], *Suryoday Agada.*^[36] *Haridra* is included in *Vishaghna Mahakashaya*^[12]. *Haridra* is useful to patients of poisoning for *Aabhyantar* and *Bahya Prayoga.*^[37]

4. *Jatamansi*

Latin name – *Nardostachys jatamansi* D.

Family – Valerianaceae^[3]

Chemical constituent- Essential oil and resinuous matter, sesquiterpens, coumarine, valeranal, nardostachone.^[38]

Pharmacological action

1. Anti-fungal activity- *N. jatamansi* oil has fungi static activity against *Aspergillus flavus*, *Aspergillus niger*, *Fusarium oxysporum*. It has fungicidal activity.
2. Hepatoprotective activity- hepatoprotectivity activity against thioacetamide induced hepatotoxicity.
3. CNS activity- Valeranone in *Jatamansi* prolonged the barbiturate anesthesia, inhibited electroshock convulsions.
4. Antioxident activity- Extract of *Jatamansi* provides protection against lipid peroxidation.
5. Neuroprotective activity- The protective effect is associated with improving glutathione content, inhibiting lipid peroxidation.
6. Antiparkinson's activity- It slows the neuronal injury caused in parkinson's disease.
7. Antidiabetic activity- It decreases glucose level significantly.
8. *Jatamansi* has antimicrobial, anti hypertensive activity.^[39]

Pharmacological action according to Ayurveda: *Dahashamaka, Vishaghna, Jwaraghna, Kushthaghna, Twakadoshahara.*^[38]

Therapeutic action: *Twachya, Deepana, Pachana, Balaprada, Mutrala, Hrudya, Vatanulomaka.*^[38]

Anti-toxic action: It is important content of anti-toxic preparation like *Chandrodaya Agada*^[33], *Rushabha Agada*^[9], *Dashanga Agada*^[39], *Mahagandhahasti Agada*^[31], *Mrutsanjeevana Agada*^[30], *Yapanakhya Agada*^[40], *Sanjivani Agada*^[26], *Tarunpalasha Kshara.*^[41]

5. *YASHTIMADHU*

Latin name – *Glycyrrhiza glabra* Linn.

Family- Fabaceae^[3]

Chemical constituent – Glycyrrhizin, asparagines, sulphuric and malic acid, calcium and magnesium salts^[42]

Pharmacological action

1. Anti-inflammatory – Agent on neutrophil functions including reactive oxygen species, quenching agent of free radicals.
2. Anti-oxidant activity – significant free radical scavenging, Hydrogen donating, metal ion chelating, anti-lipid peroxidative
3. Anti-fungal activity- Isoflavonoids such as glabridin, glabrol and their derivatives are responsible for inhibition of *Mycobacterium smegmatis* and *Candida albicans*.
4. Anti-tussive and expectorant activity- It decreases irritation and produce expectorant effect 5.
5. Anti-bacterial activity- In vitro studies prove that inhibitory activity on cultures of *Staphylococcus aureus* and *Streptococcus pyogenes*.
6. Anti-malarial activity- Licochalcone possesses anti-malarial property.
7. Immunostimulatory effect- It shows immunostimulatory effect by increased production of TLD 69 lymphocytes and macrophages from human granulocytes. It prevents increase in amount of immune-complexes related to autoimmune disease like SLE.
8. Anti-diabetic activity, anti-viral activity.^[43]

Pharmacological action according to Ayurveda: *Shothahara, Vatanuloma, Kandughna, Chardinigrhan, Vranaropana, Dahashamaka, Jeevaniya.*^[44]

Therapeutic action: *Rasayana, Dagdha Vrana Ropak.*^[44]

Anti-toxic action : It is one of the ingredients of anti-toxic preparation like *Chandrodaya agada*^[33], *Dooshivishari agada*^[45], *Himavana agada*^[46], *Vishanashak yavagu*^[47], *Kashmaryadi pana*^[48] used in *Mandala Sarpa Visha, Vamana Yoga for Loota Visha*^[49], it is content of *Ashtam Vagnashak Yoga* explained by *Acharya Charaka*^[29], *Mrutsanjivana Agad*^[30], *Mahagandhahastinam agada*^[31], *Rushbhakadi Agada*^[9], *Ksharagada*^[11], content of *Dhatugat Vish Nashak Yoga*^[50] and *Loota Vishnashak Yoga*^[51], *Amrit Ghrita*^[52], *Mahagada*^[10], *Sanjivana Agada*^[26], *Mahasugandhinamak Agada*^[27]

6. *Draksha*

Latin name: *Vitis vinifera*

Family: Vitaceae^[4]

Chemical constituent: Flavonoids, Kaempferol-3-0-glycosides, Quercetin 3-0-glycosides, Myricetin.^[53]

Pharmacological action

1. Anti oxidant activity – grapes seed has anti toxicant and free radical scavenging activity.
2. Anti carcinogenic effect-Grape seeds resulted in highly effective protection against phorbol ester induced tumor promotion in chemical carcinogen initiated *mouse* skin.
3. Antimicrobial and antiviral activity – Its effect reported in component of grapes including gallic acid, hydroxycinnamic acids, flavanol-9
4. Cardio protective –provides significant cardio protection by improving post-ischemic ventricular recovery.
5. Anti -diabetic, Antitoxic, Anti-inflammatory, Anti-microbial^[54]

Pharmacological action according to Ayurveda: *Kamalahara, Jwaraghna, Vataraktaghna, Trushnahara.*^[53]

Therapeutic action: *Swarya, Mutrala, Chakshushya, Vrushya, Bhedani, Saraka.*^[53]

Anti-toxic action: It is one of the ingredient of *Mandali Vishanashak Yoga*^[55], it is used for *Shankavisha* treatment.^[56] *Sugandhadi Agada*^[57], used for *Vishajanya Kasa, Shwasa, Hikka*^[58] It is one of the content of *Loota Vish Nashak Yoga.*^[51]

7. *HARENUKA*

Latin name- *Vitex Agnus-Castus* Linn

Family- Verbenaceae^[5]

Chemical action – Castine^[59]

Pharmacological action

1. Antifungal activity- Antifungal activity seen in *Candida* species responsible of nosocomial infections.^[60]
2. Antioxidant activity-protection against oxidative stress and degenerative diseases, gallic acid showed strong antioxidant activity by preventing lipid per-oxidation.^[61]

Pharmacological action according to Ayurveda: *Trushnahara, Kandughna, Vishahara, Dahahara.*^[59]

Therapeutic action: *Santambhana, Anulomaka, Mutrajanan, Shothaghna, Uttejaka.*^[59]

Anti-toxic action: It is one of the ingredient of *Rushbha Agada*^[9], *Sanjivana Agada*^[26], *Kalyanaka Sarpi*^[18], *Mahasugandhiraj Agadraj*^[27], *Ajeya Ghrita*^[25], *Lodhradi Agada*^[62], *Sugandhyakhya Agada*^[17], *Katukadi Agada*^[63], *Chandrodaya Agada*^[33], *Mrutasanjivani Agada*^[30], *Mahagandhhastinam Agada*^[31], *Ksharagada*^[11], it is one of the content of *Loota Vishnashak Yoga.*^[21]

Madhu (honey)

According to Acharya Sushruta Madhu has *Madhura Rasa, Kashaya Rasa Guna-Ruksha, Lekhana, Shita.*^[64]

According to Acharya Charaka Madhu has *Kashaya Rasa Guna –Ruksha, Tikshana, Kaphashamaka.*^[65]

Pharmacological action: It has hygroscopic and fermentation property Antibacterial, Antidiarrheal. Used in obesity, skin disease, burns, wounds, cough.^[66]

Therapeutic action: *Vishaghna, Krumighna, Vajikara, Vranaropana, Hrudyta, Trushnashaman, Medohara, Shodhana.*^[67]

Anti-toxic action: It is one of the constituent of anti-toxic preparation like *Tarksyia Agada*^[68], *Rishabha Agada*^[9], *Sanjivana Agada*^[26], *Mahasugandhi Agada*^[27], *Himvan Agada*^[46], *Padmakagada*^[35], *Mandar Agada.*^[20]

DISCUSSION

Manjisthadi Agad contains 7 drugs. These drugs possess various medical properties like anti-bacterial, Anti-oxidant. So it can be used in the treatment of various disorders especially skin disorders. While explaining *Dushivisha Acharya* have mentioned some skin disorders also. It manifests due to *Asatmya Ahara-Vihara* and contact with different poisonous materials. These poisonous substance remains in the body for longer time and cause ill effect on immune system. Various drugs of *Manjisthadi Aagad* like *Haridra* has immuno-modulatory, anti-allergic, antiseptic properties. *Manjistha* act as a blood purifier and help in curing skin disease by counteract the adverse effect of *Visha. Ela* act as an antioxidant, antibacterial and

helps in regaining the original texture of skin. *Jatamansi* act on CNS and relieves the stress. *Yashtimadhu* also act as anti toxicant, immunomodulatory, hepatoprotectory. Thus *Manjisthadi Agad* has *Raktaprasadak*, *Kandughna*, *Vishaghna* properties. All the ingredients of *Manjisthadi Agad* together helps in reducing the effect of *Visha* and act as a *Vishaghna Kalpa*. Most of the drug has *Ushna Veerya* so it can be used in *Vata Kapha Janya Dushta Vyadhi* such as *Kushtha*, *Kandu*, *Shotha*, *Stambha*. *Madhur Rasa* reduces the action of *Visha* so act as *Vishaghna* and *Balya*. Some of the drugs has *Sheeta Veerya* so it act on *Visha*.

CONCLUSION

Bharat Bhaishajya Ratnakara described *Manjisthadi Agad*. Most of the ingredients of *Manjisthadi Agad* can be used in skin diseases, gastric diseases, convulsions, fungal infections, burns because of *Vishghna*, *Kandughna*, *Raktaprasadak*, *Dahashamak* properties but for this further research and clinical trials are needed. The review of this article is to provide collective information on pharmacological, therapeutic and anti-toxic use of *Manjisthadi Agad*.

REFERENCES

1. Kaviraj Dr. Shastri Ambikadatta- Sushrut samhita Kalpasthana, Jangamvishvidnyaniyam Aadhya, 3/21, Edition reprint, published by –Chaukhamba Sanskrit Sansthan Varanasi, 2008; 32.
2. Rasvaiddya Nagindas Changanlal Shah, editor-Bhishgratna Gopinath Gupta, *Bharat Bhaishajya Ratnakar*, *Makaradimishraprakaran Shlok* 5684, published by Motilal Banarasidas, edition, 4; 1685: 269.
3. Brahmasankara Misra and Rupalalaji Vaisya, *Bhavaprakasha* of Shribhava Misra(including Bhavprakash Nighantu), published by Chaukhambha Sanskrit Bhawan, Varanasi, edition-reprint, 2015; 1.
4. A.P. Deshpande, R.R. Javalgekar, *Dravyaguna*, published by Anmol Distributers, Pune , edition 2009; 1&2: 900.
5. Chunekar Krushnachandra – *Bhavaprakashnighantu*, Edition reprint 2015, published by Chaukhambha Bharati Academy Varanasi.
6. D. Shanth Kumar Lucas- *Dravyaguna-Vijnana*. (Study of Dravya Materica Medical), Edition, Chaukhambha Visvabharati Varanasi, 2008; 2: 219.

7. Exploration in pharmacological screening of *Rubia Cordifolia* verses Ayurvedic Documentation: a comparative validation –Jani Dilip Khemji, Sawant Bipin Vitthal, JPSI4/2 Mar-Apr 2015, www.jpsionline.com
8. D. Shanth Kumar Lucas- *Dravyaguna-Vijnana* (Study of *Dravya Materica* Medical), Edition, Chaukhamba Visvabharati Varanasi, 2008; 2: 221.
9. Shastri Ambikadatta –‘*Sushrutsamhita*’ Poorvardha Kalpasthana Sarpavishachikitsa Adhyaya 5/67-72 - Edition Chaukhamba Sanskruta Sansthan, Varanasi, 2003; 65.
10. Shastri Ambikadatta –‘*Sushrutsamhita*’ Poorvardha Kalpasthana Sarpavishachikitsa Adhyaya 5/61 - Edition 2003 Chaukhamba Sanskruta Sansthan, Varanasi, 2003; 64.
11. Shastri Ambikadatta –‘*Sushrutsamhita*’ Poorvardha Kalpasthana Dundubhiswaniya Adhyaya 6/3 - Edition 2003 Chaukhamba Sanskruta Sansthan, Varanasi, 68.
12. Tripathi Ravidatta and Shukla Vidyadhar – ‘*Charaksamhita*’ Sutrasthana - ‘*Aaragwadhiya Adhyaya*’ 4/16 - Edition 2006; 1. Chaukhamba Sanskrit Pratishthana Delhi.
13. Tripathi Ravidatta and Shukla Vidyadhar – ‘*Charaksamhita*’ Vol. 2 Chikitsasthana- ‘*Vishchikitsitam Adhyaya* 23/50- Edition 2006 Chaukhamba Sanskrit Pratishthana Delhi: p 548.
14. D. Shanth Kumar Lucas- *Dravyaguna-Vijnanal*. (Study of *Dravya Materica* Medical), Edition, Chaukhamba Visvabharati Varanasi, 2008; 2; 420.
15. Gurdip Singh et al. Antioxidant and antimicrobial activities of essential oil and various oleoresins of *Elettaria cardamomum* (seed and pods) *Journal of the science of Food and Agricultural*, 2008; 88(2): 280-289. <https://scholar.google.co.in>
16. Kaviraj Dr.Atridev Gupta –commentator, *Ashtanga Sangraha*, II. Krushnadas Academy, Varanasi, Uttarsthana-Vishapratisheda.1st edition, 2001; 40/77; 347.
17. Kaviraj Dr. Atridev Gupta-*Ashtanga Sangraha* Uttarsthana, Vishopadravapratishedhaadhyaya, 47/39, Edition reprint, published by –Chaukhamba Krushnadas Academy Varanasi, 2005; 383.
18. Acharya Vidyadhar Shukla, Prof. Ravidutta Tripathi-*Charak Samhita*, edited with vaidyamanorama hindi commentary, chikitsasthana, Unmadachikitsa adhyaya 9/35-41, edition reprint, published by-Chaukhamba Sanskrit Sansthan Varanasi, 2010; II: 240.
19. Dr. Bramahanand Tripathi-*Ashtangahrudya* Uttarsthana, Keetalutadivishapratishedaahyaya 37/74, Edition reprint, published by - Chaukhamba Sanskrit Sansthan Varanasi, 2012; 1174.

20. Dr. Bramahanand Tripathi-Ashtangahrudya Uttarthana, Keetalutadivishapratisheadaahyaya 37/63-64, Edition reprint, published by - Chaukhamba Sanskrit Sansthan Varanasi, 2012; 1174.
21. Shastri Ambikadatta –‘Sushrutsamhita’ Poorvardha Kalpasthana Sarpavishachikitsa Adhyaya 8/103-104 - Edition reprint Chaukhambha Sanskruta Sansthan, Varanasi, 2014; 97.
22. D. Shanth Kumar Lucas- Dravyaguna-Vijnana (Study of Dravya Materica Medical), Edition, Chaukhambha Visvabharati Varanasi, 2008; 2: 413.
23. Curcumin-pharmacological action and its role in oral submucous fibrosis; A review bu Abhijeet Alok, Indra Deo Singh; Journal of clinical and Diagnostic Research: JCDR, 2015.
24. D. Shanth Kumar Lucas- Dravyaguna-Vijnana (Study of Dravya Materica Medical), Edition, Chaukhambha Visvabharati Varanasi, 2008; 2: 412.
25. Shastri Ambikadatta –‘Sushrutsamhita’ Poorvardha Kalpasthana Sthavarvishavidnyaniya Adhyaya 2/47-49 - Edition Chaukhambha Sanskruta Sansthan, Varanasi, 2003; 36.
26. Shastri Ambikadatta –‘Sushrutsamhita’ Poorvardha Kalpasthana Sarpavishachikitsa Adhyaya 5/73-74 - Edition Chaukhambha Sanskruta Sansthan, Varanasi, 2003; 65.
27. Shastri Ambikadatta –‘Sushrutsamhita’ Poorvardha Kalpasthana Dundubhiswaniya Adhyaya 6/14-27 - Edition Chaukhambha Sanskruta Sansthan, Varanasi, 2003; 69.
28. Shastri Ambikadatta –‘Sushrutsamhita’ Poorvardha Kalpasthana Dundubhiswaniya Adhyaya 8/48 - Edition Chaukhambha Sanskruta Sansthan, Varanasi, 2003; 88.
29. Tripathi Ravidatta and Shukla Vidyadhar – ‘Charaksamhita’ Chikitsasthana- ‘Vishchikitsitam Adhyaya 23/70-76 - Edition Chaukhamba Sanskrut Pratishtana Delhi, 2006; 2: 552.
30. Tripathi Ravidatta and Shukla Vidyadhar – ‘Charaksamhita’ Vol. 2 Chikitsasthana- ‘Vishchikitsitam Adhyaya 23/54 - Edition Chaukhamba Sanskrut Pratishtana Delhi, 2006; 549.
31. Tripathi Ravidatta and Shukla Vidyadhar – ‘Charaksamhita’ Vol. 2 Chikitsasthana- ‘Vishchikitsitam Adhyaya 23/83-94 - Edition Chaukhamba Sanskrut Pratishtana Delhi, 2006; 553.
32. Tripathi Ravidatta and Shukla Vidyadhar – ‘Charaksamhita’ Vol. 2 Chikitsasthana- ‘Vishchikitsitam Adhyaya 23/212-214 - Edition Chaukhamba Sanskrut Pratishtana Delhi, 2006; 570.

33. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra- Vishpratishedham Adhyaya – 35/24-32 -Edition Chaukamba Sanskrut Pratishtna, Delhi, 2012; 1147.
34. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Sarpavishpratishedham Adhyaya – 36/82 -Edition Chaukamba Sanskrut Pratishtna, Delhi, 2012; 1163.
35. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Keetalootavishpratishedham Adhyaya - 37/70 - Edition Chaukamba Sanskrut Pratishtna, Delhi, 2012; 1174.
36. Gupta Atridev – ‘Ashtangasangraha’ Uttartantra –Vishpratishedha Adhyaya – 40/5- Edition Chaukhamba Krushnadas Academy, Varanasi, 2005; 346.
37. Gupta Atridev – ‘Ashtangasangraha’ Uttartantra –Vishpratishedha Adhyaya – 40/72- Edition Chaukhamba Krushnadas Academy, Varanasi, 2005; 346.
38. D. Shanth Kumar Lucas- Dravyaguna-Vijnana. (Study of Dravya Materica Medical), Edition, Chaukhambha Visvabharati Varanasi, 2008; 2: 232.
39. A review article on phytochemistry and pharmacological profiles of Nardostachys jatamansi DC-medicinal herb by Purnima, Meenakshi Bhatt et al;Journal of pharmacognosy and Phytochemistry, 2015; 3(5): 102-106.
40. Kaviraj Dr. Atridev Gupta- Ashtanga Sangraha(Vol II).Krushnadas Academy,Varanasi, Uttarsthana-Vishpratishedha.1st edition, 2001; 40/50: 344.
41. Kaviraj Dr.Atridev Gupta- Ashtanga Sangraha Uttarsthana, Vishpratishedhiyaadhyaya, 40/110, Edition reprint, published by –Chaukhamba Krushnadas Academy Varanasi, 2005; 350.
42. D. Shanth Kumar Lucas- Dravyaguna-Vijnana (Study of Dravya Materica Medical), Edition, Chaukhambha Visvabharati Varanasi, 2008; 2: 103.
43. Glycyrrhiza glabra (Liquorice)- a potent medicinal herb by Monica Damle;International Journal of Herbal Medicine, 2014; 2(2): 132-136. www.florajournal.com
44. D. Shanth Kumar Lucas- Dravyaguna-Vijnana (Study of Dravya Materica Medical), Edition, Chaukhambha Visvabharati Varanasi, 2008; 2; 104.
45. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra- Vishpratishedham Adhyaya – 35/39 -Edition Chaukamba Sanskrut Pratishtna, Delhi, 2012; 1148.
46. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Sarpavishpratishedham Adhyaya – 36/63-64 -Edition Chaukamba Sanskrut Pratishtna, Delhi, 2012; 1160.
47. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Vishpratishedham Adhyaya – 35/23 -Edition Chaukamba Sanskrut Pratishtna, Delhi, 2012; 1146.
48. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Sarpavishpratishedham Adhyaya – 36/65 -Edition Chaukamba Sanskrut Pratishtna, Delhi, 2012; 1161.

49. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra- Keetaiootadivishpratishedham Adhyaya – 37/75 -Edition Chaukamba Sanskrut Pratishthna, Delhi, 2012; 1174.
50. Vd. Harish Chandra Singh Kushwaha –Charaksamhita Chikitsasthana-Vishachikitsitam Adhyaya 23/187 edition Chaukhambha Orientalia, Varanasi, 2009; II: 609.
51. Vd. Harish Chandra Singh Kushwaha –Charaksamhita Chikitsasthana-Vishachikitsitam Adhyaya 23/202 edition Chaukhambha Orientalia, Varanasi, 2009; II: 613.
52. Vd. Harish Chandra Singh Kushwaha–Charaksamhita Chikitsasthana-Vishachikitsitam Adhyaya 23/242-248 edition Chaukhambha Orientalia, Varanasi, 2009; II: 618.
53. D. Shanth Kumar Lucas- Dravyaguna-Vijnana (Study of Dravya Materica Medical), Edition, Chaukhambha Visvabharati Varanasi, 2008; 2: 512-513.
54. Therapeutic and medicinal uses of Draksha –A review by Dr. Nidhi Gara, Dr. Akil Jain; IJSR[ISSN online, Mar 2017; 6(3).
55. Shastri Ambikadatta –‘Sushrutsamhita’ Poorvardha Kalpasthana Sarpavishachikitsa Adhyaya 5/76-77 - Edition Chaukhambha Sanskruta Sansthan, Varanasi, 2003; 66.
56. Gupta Atridev – ‘Ashtangasangraha’ Uttartantra – Adhyaya – 42/67 - Edition Chaukhambha Krushnadas Academy, Varanasi, 2005; 362.
57. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Sarpavishpratishedham Adhyaya – 36/61-62 -Edition Chaukamba Sanskrut Pratishthna, Delhi, 2012; 1160.
58. Gupta Atridev – ‘Ashtangasangraha’ Uttartantra –Vishapratishedha Adhyaya – 47/7 -13 Edition Chaukhambha Krushnadas Academy, Varanasi, 2005; 381.
59. Chuneekar Krushnachandra – Bhavaprakashnighantu, Edition reprint, published by Chaukhambha Bharati Academy Varanasi, 2015; 241.
60. Chemical composition and Antifungal activity of Vitex Agnus-Castus seeds oil growing in Morcaco by A. Asdadi, L.M. Idrissi Hassani et al; J. Mater. Environ. Sci., 2014; 5(3): 823-830. ISSN:2028-2508,CODEN:JMESC�
61. Antioxident activity of different extracts of Vitex agnus-castus(L.) and phytochemical profile by Khaled Nabin Rashed; Research in pharmacy, 2013; 3(6): 1-05. ISSN:2231-539;www.researchinpharmacy.com
62. Gupta Atridev – ‘Ashtangasangraha’ Uttartantra – Adhyaya – 42/59 - Edition Chaukhambha Krushnadas Academy, Varanasi, 2005; 359.
63. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Sarpavishpratishedham Adhyaya – 36/67 -Edition Chaukamba Sanskrut Pratishthna, Delhi, 2012; 1161.
64. Ambikadatta-Sushrut samhita Sutrasthana, Dravdrvavidhi aadhyaya, 45/132, Edition reprint, published by-Chaukhambha Sanskrit Sansthan Varanasi, 2008; 180.

65. Acharya Vidyadhar Shukla, Prof.Ravidutta Tripathi-Charak Samhita, edited with vaidyamanorama hindi commentary, Vimanasthana, Rasvimana adhyaya adhyaya 1/3, edition reprint, published by-Chaukhamba Sanskrit Sansthan Varanasi, 2011; I: 551.
66. www.medicalnewstoday.com
67. D. Shanth Kumar Lucas- Dravyaguna-Vijnana (Study of Dravya Materica Medical), Edition, Chaukhamba Visvabharati Varanasi, 2008; 2: 742.
68. Tripathi Brahmanand – ‘Ashtangahridayam’ Uttartantra-Sarpavishpratishedham Adhyaya – 36/82 -Edition 2012 Chaukamba Sanskrut Pratishtna, Delhi, 1163.